



A critical analysis of beach management systems and processes on the Maltese Islands, focusing on public and key stakeholder perceptions

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Abstract

This research examines the approach towards the management of beaches in the Maltese Islands. Specifically, this research aims to assess the perceptions of the processes of, and approaches to, beach management focusing on beach users and stakeholders' views, to develop an integrated and sustainable framework for the future. The implementation of Integrated Coastal Zone Management with a focus on beach management in Europe, the Mediterranean and Malta are characterised. The need for beach management, its strategies and concept are also evaluated. The beach management in the Maltese Islands is evaluated, covering both the historical and current processes and approaches and highlights the major issues being faced by Maltese beaches. Four case studies around Malta having a specific type of criteria were chosen to examine the problems related to the management of beaches in detail. The results obtained from the beach users' (n=225) and online questionnaires (n=203), as well as the stakeholders' semi-structured interviews (n=19), were examined and assessed. This was done to understand how beaches are being used, to highlight key issues and, based on the results, propose recommendations to increase the effectiveness of beach management. This research has discovered namely that in the Maltese Islands: there are no management plans or policies that focus specifically on beaches, management is fragmented between various authorities, there is a lack of vertical communication and public participation in management decisions, beach management is only practiced during the bathing season and lack of monitoring and enforcement. In this regard, this research has developed an integrated and sustainable model that could assist managers in developing management plans for each beach and be able to enforce, monitor and review it. This research concludes that even though there has been a significant improvement since the Blue Flag was implemented, other aspects should also be taken into consideration for an integrated approach towards beach management. This research contributes to the wider knowledge by including public and stakeholders' participation in beach management, identifies key issues and

recommendations of how a beach could be improved and develops a step-by-step model specifically for Small Island States like Malta.

Keywords: beach management, integrated model, questionnaires, semi-structured interviews, Maltese Islands.

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Declaration

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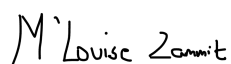
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Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

This thesis has been subject to review by University of Portsmouth Faculty Ethics Committee. The letter from the Faculty Ethics Committee confirming the favourable opinion and the form UPR16 declaring the ethical conduct of the research are included in Appendix I.



Signature of Candidate

22/09/2020

Date

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Abbreviations

AEI	Area of Ecological Importance
BAMM	Bathing Area Management Model
BARE	Bathing Area Registration and Evaluation
BF	Blue Flag
BMU	Beach Management Unit
CAMP	Coastal Area Management Plan
CMD	Cleansing and Maintenance Division
CRAB	Coastal Resource Advisory Board
CZ	Coastal Zone
CZM	Coastal Zone Management
DPA	Development Planning Act
EC	European Community
EEA	European Environment Agency
EHD	Environmental Health Directorate
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPD	Environment Protection Directorate
ERA	Environment and Resources Authority
ERDF	European Regional Development Fund
EU	European Union

FEE	Foundation for the Environment
EEEE	Foundation for Environmental Education in Europe
FTZD	Foundation for Tourism Zone Development
ICAM	Integrated Coastal Area Management
ICZM	Integrated Coastal Zone Management
IGC	Inter-Governmental Committee
IOI	International Ocean Institute
LC	Local Council
LPC	Local Participatory Committee
MP	Management Plan
MAP	Mediterranean Action Plan
MESDC	Ministry for the Environment, Sustainable Development and Climate Change
MECP	Ministry for the Environment, Climate Change and Planning
MEPA	Malta and Environment Protection Authority
MNHP	Majjistral Nature and History Park
MPA	Marine Protected Area
MSFD	Marine Strategy Framework Directive
MSP	Marine Spatial Planning
MSSD	Mediterranean Strategy for Sustainable Development
MTA	Malta Tourism Authority
NT	Nature Trust

NGO	Non-Governmental Organisations
NSO	National Statistics Office
PA	Planning Authority
PAS	Public Attitude Survey
PAP/RAC	Priority Actions Programme / Regional Activity Centre
PIS	Participant Information Sheet
RCO	Rural Conservation
SAC	Special Area of Conservation
SISs	Small Island States
SP	Strategic Plan
TM	Transport Malta
UN	United Nations
UNEP	United Nation Environment Programme
WISE	Water Information System for Europe
WFD	Water Framework Directive

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Disseminations

Book Chapter

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Zammit Pace, M.L., Bray, M., Baily, B., and Potts, J., (2017). Beach Management Review of the Maltese Islands in Ozhan, E. (Editor), 2017, *Proceedings of the Thirteenth International MEDCOAST Congress on Coastal and Marine Sciences, Engineering, Management and Conservation, MEDCOAST 17, 31 Oct - 04 Nov 2017*, Mellieħa, Malta, MEDCOAST, Mediterranean Coastal Foundation, Dalyan, Mugla, Turkey, Vol 1-2, 1266p.

Dedication

*This work is dedicated to
my husband Anton and son Nathan
and my parents Carmen and Anthony*

Part One: Context of the Research

Chapter One: Introduction

1.1. Introduction

This thesis examines various approaches to beach management in the Maltese Islands, focusing on beach users' and stakeholders' views and expertise using these insights, to develop an integrated and sustainable model for beach management. To understand problems associated with the management of beaches at greater depth, a multiple case study approach was undertaken, looking at four beaches across Malta. These case studies were chosen based on specific criteria such as their location and type of management structure in place. A combination of both qualitative and quantitative research methods were used in the form of questionnaires (both face-to-face and online) and semi-structured interviews to identify the patterns of use of both the public and key experts. This was done to establish how Malta's beaches are being used and understand the concerns associated with this practice by a variety of stakeholders. Research participants included beach users, government officials, Non-Governmental Organisations (NGOs), independent experts and people who earn their living directly from the beaches, such as kiosk owners. This enabled this research to explore the perceptions and behaviours of both the locals and the stakeholders towards the management of beaches. To draw on this, this research also developed pioneering recommendations to ensure adequate protection measures can be put in place at the same time as ensuring that Malta's beaches are utilised in a sustainable way for the future. Finally, an integrated and sustainable model on beach management was developed which could also be applied to other Small Island States (SISs).

This chapter starts with an introduction to the geographical location and the historical context of the Maltese Islands, as well as giving an overview of its beach management practices. It outlines the justification for undertaking this research and why the decision to study this topic was made, as well as explaining why such research is important. This is then followed by the aims and objectives of the research, giving an overview of what was examined under each objective. Finally, the

chapter gives an outline of the structure of the thesis, which is divided into three parts.

1.2. The Maltese Islands context

This section sets the context in which this study was conducted. It outlines the geographical and historical setting of the Maltese Islands, which emphasises the reason why beaches and their management are so important, especially for a small island like Malta. In addition, it gives an overview of past and current beach management on the Islands and explains why such research is important.

1.2.1. *Geographical and historical context*

The Maltese Archipelago consists of three main islands, namely Malta, Gozo and Comino, and other small islets amounting to an area of 316 km² (NSO, 2014) with c. 230 km¹ of coastline when measured at 1: 10, 000. They are located at the centre of the Mediterranean and as such are considered very strategically placed in terms of trade and defence (Figure 1.1). The Maltese Islands served as a military base while Malta was a British colony, until 1964 when Malta gained its independence.

¹ Published values are variable, so in this research, the coastline was calculated by the author.

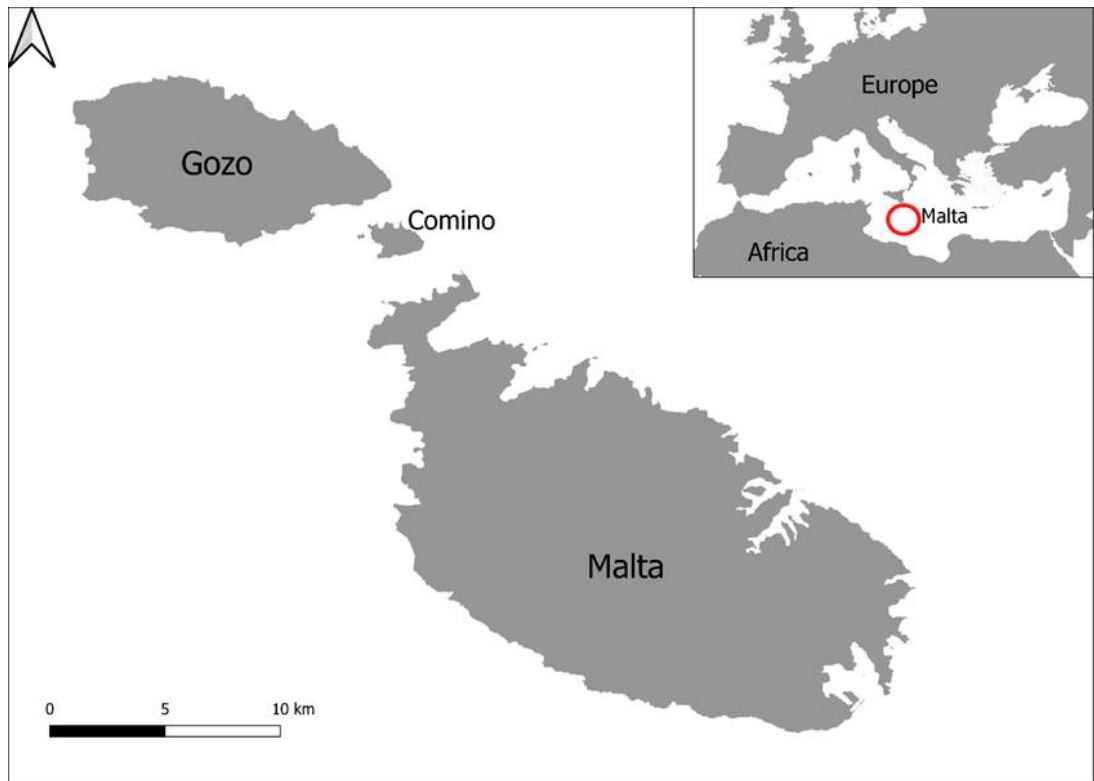


Figure 1.1: The map of the Maltese Islands and their location in the Mediterranean (inset).

Due to the Maltese climate, with its moderate mild, wet winters and warm, dry summers, the Islands are very popular with tourists, especially during the summer, which in turn increases coastal activity (Planning Authority, 2002; MEPA, 2010). In fact, “tourism and recreation are [seen as] two of the predominant uses in coastal areas” (Planning Authority, 1999, p. 126). Post-independence, the Maltese economy flourished through tourism and financial services. Between 1965 and 1975, the tourism industry increased by around 490%, from 65,000 tourists in 1965 to 384,000 tourists ten years later (Boissevain, 1979). This has further increased to c. 2.5 million tourists in 2018, and the number keeps rising every year (NSO, 2019). Additionally, the Maltese population is also high (c. 493,000 people) with a density of 1,867 persons per km² in 2018 (NSO, 2019). Thus, pressures and competition among various sectors on the islands, especially between coastal management and tourism, are inevitable (UNEP/MAP, 2003b; Zammit Pace, Bray, Baily, and Potts, 2017).

The coast is considered to be one of the most valued natural resources on the Islands (Micallef, 2002; Zammit Pace et al., 2017; Zammit Pace et al., 2019), and although at

least 50% of the Maltese coast and 74% of the Gozitan coast are inaccessible (Cassar, 2003), these areas must still be taken care of. Also, beaches on the Maltese Islands only amount to c. 1.9% of the coastline and most of them are being degraded due to an increase in coastal development (Zammit Pace et al., 2019). According to Zammit Pace et al (2019), approximately half of the beaches have roads directly behind them and up to 25% of them have roads built on them. Thus, given that tourism is the main economic input for the Maltese Islands (Baldacchino, 2015) especially for its 'sun, sand and sea' market, the management of beaches is imperative.

1.2.2. *Overview of beach management in the Maltese Islands*

As will be discussed in more detail in Section 2.5.5.1, the Blue Flag (BF) scheme is the main tool that is currently being used for beach management in the Maltese Islands. The BF is only being applied to certain beaches which are managed either by the Malta Tourism Authority (MTA), the Ministry for Gozo or other private hoteliers. In 2019, 12 beaches out of 58² satisfied all the criteria required by the scheme and were awarded the BF. Other government authorities such as the Environmental Health Directorate (EHD) and the Cleansing and Maintenance Division (CMD) are also involved in the management of beaches for water quality and cleansing respectively. This demonstrates that the Maltese Islands lack an integrated beach management approach and this is fragmented amongst different authorities. Additionally, there are no beach management plans and/or policies which often creates duplication of work due to lack of communication and unclear responsibilities (Shipman and Stojanovic, 2007; Sardá et al., 2015). Such aspects result in confusion amongst both beach users and stakeholders as to who is responsible for the beaches (Chapters Five and Six). In addition, the lack of a responsible authority and a beach management plan has led the tourism authority (MTA) to manage certain beaches which were considered to be viable, accessible and could attract further tourists. However, this has left other beaches without any management or supervision. As explained by Lucrezi, Saayman, and Van der Merwe, (2015, p. 212), "the BF does not address all relevant aspects [such as geomorphological processes, beach users' perceptions and

² As identified in Zammit Pace et al. (2019)

preferences] that are encompassed in beach ecosystems functions, and this results in poor management”. In this regard, the BF tool can be considered as the initial stage of managing a beach, but on its own is not enough. As a result, this research has also included the knowledge and opinions of both the beach users and stakeholders.

1.2.3. Justification for the research

Even though the challenges associated with coastal development can be observed worldwide (such as coastal erosion and marine pollution), SISs experience them to a higher degree due to the limited available area which increases the competition among different sectors, as well as due to the higher population densities (Briguglio, 1995; Calado, Quintela, and Porteiro, 2007; Ramsey, Cooper, and Yates, 2015). The problem is further increased if there are no management plans and monitoring in place (Ramsey et al., 2015), as in the case of Malta.

During the literature review on the Maltese Islands it was noted that only a few studies were conducted on Maltese beaches and their management, although some of them were outdated. For instance, the works by Micallef and Williams have been particularly significant in providing a theoretical basis on which this research could build. They focused on the theoretical strategies (Micallef and Williams, 2002), functional analysis (Micallef and Williams, 2003), beach classifications (Micallef and Williams, 2004) and also the development of a Bathing Area Registration and Evaluation (BARE) (Williams and Micallef, 2009). In addition, there were other reports such as the Coastal Topic Paper (Planning Authority, 2002) and the Coastal Area Management in Malta (PAP/RAC, 2005a) which highlighted the main issues.

However, such papers and reports did not integrate the beach users and stakeholders' views on management decisions. In addition, these were written before 2008, when there was no type of management in Malta, and so information on the public's opinions on the matter was lacking. Technology, such as webcams, has also improved which can help in the management of beaches. Some of the main issues, such as lack of management plans and no single authority which is responsible for beaches, still applied. Additionally, beach management in Malta was not consistent as not all beaches were being taken care of. Hence, this research also

develops a model to improve the management of beaches and fill in the gaps that have been an issue for at least 20 years. This model can also be used in other SISs with similar problems to Malta. In this regard, this research can be considered as an extension of and important addition to all the studies and reports that were carried out which were related to beach management. It also contributes to the wider knowledge by including public and stakeholders' participation in beach management and identifies key issues and recommendations on how a beach could be improved.

1.3. Research and objectives

The overall aim of this research is to critically assess the perceptions of the processes and approaches to beach management in the Maltese Islands, with a focus on beach users' and stakeholders' knowledge, to develop an integrated and sustainable framework for the future. This research is namely a comparative study of beach users' and stakeholders' perceptions of beach management focusing on four different case studies around Malta. In this research, perceptions are considered as a way in which participants understand and/or interpret beaches and their management. As mentioned in Section 1.2, this study not only seeks to contribute to wider knowledge in coastal management and development, with a special focus on beaches and their perceptions, but it also provides a step-by-step model that could be used by other SISs.

The following objectives were set to achieve this aim:

1. To evaluate the historical development of beach management in the Maltese Islands

This objective explored how beach management in the Maltese Islands evolved through time by reviewing diverse literature. It also sought to understand why certain aspects of management did not improve, and what the main issues that were being faced by Malta's beaches were. These results can be found in Chapter Three.

2. To critically analyse current beach management practices in Malta

The second objective examined and assessed the measures and practices that were currently being used to manage the beaches. In addition, this research also sought to assess whether there were any policies and management plans (MPs) which focused on beaches and to identify who was the responsible authority for the latter. Understanding and comparing different current practices have identified key issues, and as such developed recommendations on how to improve management. These results can be found in Chapters Two, Three and Seven.

3. To understand beach users' perception of beach management in Malta

This objective aimed to identify beach users' behaviour and views on the beaches and their management (if any). This included face-to-face and online questionnaires with beach users on the four different case study beaches around Malta. By involving the public in management decisions, it is more likely to increase the effectiveness of a MP (Prati, Albanesi, Airoidi, and Pietrantonio, 2016), especially given the fact that they are the primary users of this resource. These results can be found in Chapter Five.

4. To investigate the views of key experts and stakeholders to identify critical issues surrounding the current beach management processes

Apart from the beach users' questionnaires, the research also sought to explore the stakeholders' views of, and aspirations for, beach management due to their expertise in the field. To achieve this objective, semi-structured interviews were undertaken with 19 different key experts and stakeholders. The results obtained from the interviews are given in Chapter Six.

5. To develop an integrated and sustainable beach management model for the beaches of Malta and the other Small Island States.

The last objective of this research was to develop a model that could be used to manage beaches in an integrated and sustainable approach. In this regard, all the knowledge and feedback gained from the literature review, the questionnaires and

the interviews were used to develop such a model. This model should be used for each beach, given the diversity of the people they attract and the range and purposes they have (Zielinski and Botero, 2019). A detailed explanation of how this model works can be found in Chapter Seven.

1.4. Thesis structure

This dissertation is divided into three main sections, organised into eight Chapters. Part one describes the context of the research and includes the first three chapters. The second part investigates the data collection, analysis and interpretation and includes Chapters Four, Five and Six, whereas the third part presents the integrated framework, recommendations and conclusions of this research in Chapters Seven and Eight.

1.4.1. *Part one: Context of the research*

This Chapter (Chapter One) introduces the research and gives a brief introduction to the geographical location and the historical context of the Maltese Islands. It also gives a summary of beach management in the Islands as well as discussing the importance of studying such a topic. This is followed by the aims and objectives of the research, highlighting the main areas of investigation outlined in the following research chapters. This Chapter then concludes with the structure of the thesis.

Chapter Two is the first of two literature chapters. It provides the conceptual background on the Integrated Coastal Zone Management (ICZM) scheme with a special focus on Europe, the Mediterranean and the SISs. The second part then focuses on the nature of beaches and the need for their management. It discusses the concepts and strategies of beach management as well as outlining the beach awards and other modes of protection and classification.

Chapter Three focuses on the historical and current practices of beach management, in Malta, as well as the main issues that beaches in the Maltese Islands are facing.

1.4.2. *Part Two: Data collection, analysis and interpretation*

Chapter Four discusses the methodological approach used for the research. It starts by providing the rationale for the research, followed by the justification for the methodology used. This is followed by a brief description of all the four case studies. The chapter also describes the mixed methods approaches undertaken and how these were analysed in this study. This includes desktop studies, field observations, questionnaires, semi-structured interviews and the associated ethical considerations.

Chapter Five presents the empirical data gathered from both the face-to-face and online questionnaires that were undertaken with the beach users. This chapter is divided into a number of sections: the first section discusses beach users' preferences for choosing that particular beach. It then observes the beach users' familiarity with beach management, related issues and their perceptions on how to improve the beaches. Finally, it also examines public participation from the beach users' point of view.

Chapter Six moves the discussion from the beach users to the key stakeholders. The semi-structured interviews that were undertaken with the relevant stakeholders including government authorities, NGOs, key experts and owners of kiosks are discussed here. This Chapter examines the results obtained from these interviews and compares some of the results with those of the questionnaires to identify whether similar issues were identified and where there was any overlap in knowledge and perceptions.

1.4.3. *Part Three: Recommendations and conclusions*

Chapter Seven draws up conclusions from both the beach users' questionnaires and the stakeholders' semi-structured interviews as well as from the literature and recommends a step-by-step beach management framework for the Maltese Islands, which can also be used in other similar SISs.

Chapter Eight is the last chapter of this thesis, which summarises all the findings by revisiting the aims and objectives of this dissertation. Additionally, it also discusses

how this study has contributed to the wider research as well as recommends other areas for future study.

Chapter Two: Integrated Coastal Zone Management with a focus on Beach Management

2.1. Introduction

Chapter Two examines the concepts and practices of ICZM with a focus on a critical element, that of beach management. This Chapter is divided into four parts. Section 2.2 examines global coastal resources and their associated management issues, and the importance of adapting an integrated approach. Section 2.3 provides an overview of the implementation of the European Union's (EU) and Mediterranean approaches to ICZM, including related principles, policies, legislation and projects. This is then followed by ICZM in SISs (Section 2.4). The last section (Section 2.5) focuses on the nature of beaches and the need for their management including the various awards, classifications and guidelines that are used to manage the beaches.

2.2. Coastal resources and the need for management

The necessity to protect and manage the coastal zone and its hinterland is becoming imperative. This section focuses on the definitions of a coastal zone and the need for coastal management.

2.2.1. *Defining the coastal zone*

Coastal zones (CZ) are dynamic and complex environments because of the numerous activities and natural processes that interact together (Pereira, Jiménez, Medeiros, and Da Costa, 2003; Alves, Rigall-I-Torrent, Ballester, Benavente, and Ferreira, 2015). In actuality, the term can vary both in space and time, either due to the characteristics of the area such as biophysics, geomorphology and vegetation or due to other factors such as anthropogenic structures (e.g.: roads), physical features or administrative boundaries (Kay and Alder, 1999, 2005; Alves et al., 2015).

Ketchum (1972 cited in Kay and Alder, 1999, p. 2), defines the CZ as “the band of dry land and adjacent ocean space in which terrestrial processes and land uses directly affect oceanic processes and uses, and vice versa”. Although, as argued by Meltzer

(1998), a standardised definition is lacking, the stakeholders' point of view together with the achievable objectives of the management process in that particular area must be considered (Meltzer, 1998; Kay and Alder, 1999). The EU continues to elaborate this definition by identifying it "as a strip of land and sea of varying width depending on the nature of the environment and management needs" [therefore, it is not defined according to administrative boundaries but can] "extend well beyond the limit of territorial water, and many kilometres inland" (PAP/RAC, 2005a) .

2.2.2. The need for coastal management

The Industrial Revolution that took place in Europe between the 18th and 19th centuries brought the relocation of factories and migration of people towards coastal areas (Kay and Alder, 2005). This intensification enhanced trade, commerce (Hinrichsen, 1999) and more lately tourism (Waugh, 2014). After the Second World War coastal cities flourished, creating more jobs, enhancing shipping routes, and increasing the migration of people towards coastal areas. This increased the modifications along the coast to accommodate such changes (Hinrichsen, 1999; Tuthill, 2014). Coastal development often increased pollution, disruption and degradation in natural habitats (Pereira et al., 2003; Ramieri, Bocci, and Markovic, 2019) and increased the risk of floods and coastal erosion. High concentrations of people living in coastal areas, sometimes exceeding the carrying capacity (Nurse et al., 2001), often create more competition between different activities, especially in relation to the coast (Wright, 2013). This will add further stress and pressure on the coastal ecosystem by "reducing [its] natural resilience, while increasing the economic and social 'costs' of adaptation" (Nurse et al., 2001, p. 846).

Consequently, any management tools to be used must be suitable for a long-term period (European Commission, 2020b). As stated by Idrus (2009, p. 49) "in reality, environmental management tends to be reactive, which means responding to problems when they have become serious enough to cause social economic impact rather than advocating a well-structured plan for anticipative measures".

As summarised by Sorensen and McCreary (1990, cited in Kay and Alder, 1999) six factors influence the management of the coast:

- It will be initiated by the government,
- It is usually born after a directive or legislation; thus it is a continuous project,
- It has a geographically defined area,
- It has objectives to follow,
- It forms part of an organisation,
- It is made up of two or more different sectors.

Whereas, according to Cicin-Sain and Knecht, (1998), the need for ICZM is triggered by other factors (Figure 2.1). A survey conducted by Cicin-Sain and Knecht (1998) of key experts from 29 different countries showed that although ICZM was usually an initiative taken by the government for both developed and developing countries, the reasoning behind such an idea was different, for example: ICZM was essential for economic opportunities in developed countries, but environmental issues were more of a concern in developing countries (Cicin-Sain and Knecht, 1998).

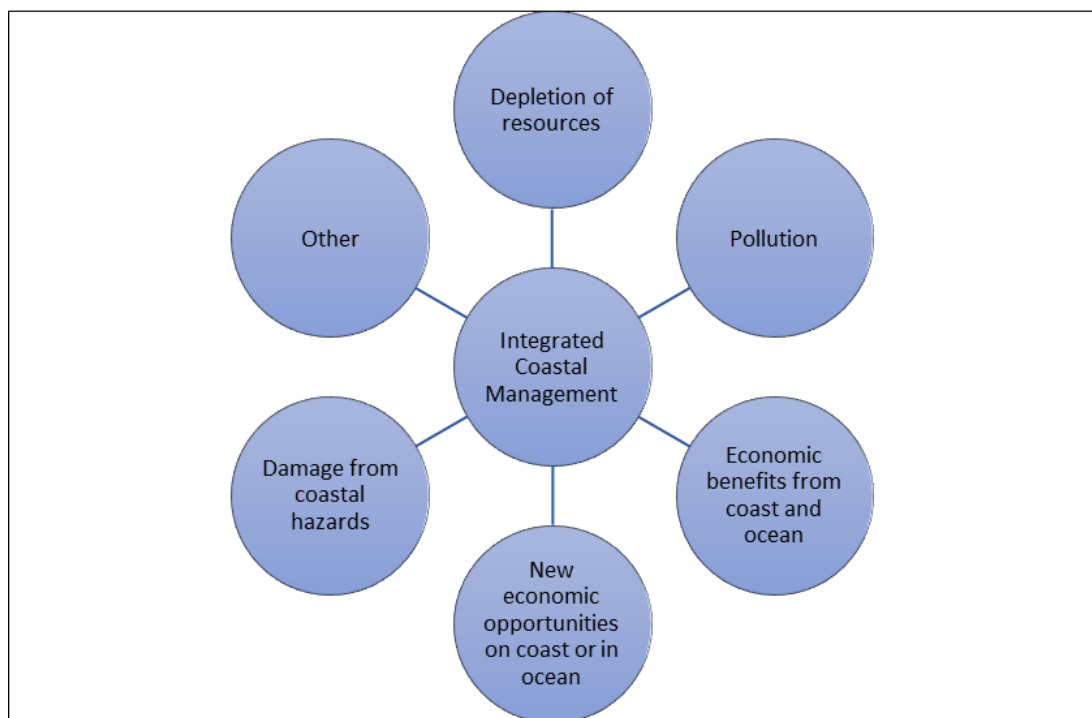


Figure 2.1 Rationale for ICZM (Source: Adapted from Cicin-Sain and Knecht, 1998).

Effective coastal management should take a comprehensive approach (Ariza, Jimenéz, and Sardá, 2012). Relevant sectors from both marine and terrestrial areas, different level of governments (Cicin-Sain and Knecht, 1998; Kay and Alder, 1999), various stakeholders as well as public participation should be encouraged from the early stages to ensure a better understanding of their preferences and behaviour (Marin, Palmisani, Ivaldi, Dursi, and Fabiano, 2009). Additionally, a manager should have “deep knowledge of the coastal processes and of the interaction between water motion, seabed topography, and coastal structures, which affect the natural response of [of the] coastal systems” (Barbaro, 2013, p. 103). Subsequently, administrative knowledge, a source of funding to implement the projects as well as sharing of data, especially among various stakeholders, are also important (Idrus, 2009).

2.2.3. Defining ICZM

There is no common definition of ICZM as this depends on which context it is being used in such as the political situation of a particular country, the environment, the stakeholders involved, existing administration structure, cultural aspects of that place, its resources, as well as the methods used to achieve the ICZM (Meltzer, 1998). As per the EU definition, “ICZM forms part of the EU Coastal and Marine Policy [and] it is a process tool aiming to achieve integrated management of all policy processes affecting the coastal zone, including both the landward and seaward parts” (European Union, 2012, p. 4). The protocol of the ICZM also defines the delimitations of both seaward, which is the territorial waters and landward, which shall be defined by the competent authority (Ramieri et al., 2019). As such, ICZM is considered as “an integrated management approach acknowledging that the coastal area is a whole system formed by both its land and sea components, with interdependent human uses and coastal resources” (Ramieri et al., 2019, p. 276).

2.2.4. ICZM and public participation

Ballinger, Cummins, O’Hagan, and Philippe, (2008, p. 3), claim that “ICZM promotes the sustainable management of coastal zones through cooperation, and integrated

planning, involving all the relevant players at the appropriate geographic level". This is also agreed by other authors like Koutrakis et al. (2011) and Soriani, Buono, Tonino, and Camuffo (2015), who emphasise the importance of having both public and stakeholders' involvement to establish a comprehensive sustainable development implementation. "Public participation is recognised as a necessary tool to ensure a successful implementation of ICZM strategies and plans" (Soriani et al., 2015, p. 143). Additionally, Ariza, Lindeman, Mozumder, and Suman, (2014), Prati et al. (2016) and Uittenbroek, Mees, Hegger, and Peter (2019), also suggested the inclusion of the stakeholders' perspectives, given that their knowledge and experience are essential. Even though both the EU ICZM Recommendation and the Mediterranean Protocol stress the importance of having a transparent process by involving the public (Soriani et al., 2015) and stakeholders, such active participation can only be obtained when their perception on specific issues, together with "their knowledge, feeling and behaviour are understood" (Koutrakis et al., 2011, p. 822).

Nevertheless, even though there have been many studies which involved beach users' perceptions of beach management through questionnaires, such as Blakemore, Williams, Unal, Coman, and Micallef, (2002); Cervantes, Espejel, Arellano, and Delhumeau, (2008); Roca and Villares, (2008); Marin, Palmisani, Ivaldi, Dursi, and Fabiano, (2009); Lozoya, Sardá, and Jiménez, (2014); Prati et al. (2016); Peña-Alonso, Ariza, and Hernández-Calvento, (2018), beach users' opinions are rarely taken into consideration when coming to management (Marin et al., 2009; Sardá et al., 2015; Peña-Alonso et al., 2018). Despite the prominence given to public participation, it is still difficult to put theories into practice and evaluate the effectiveness of such participation (Soriani et al., 2015). As argued by Botero et al. (2013, p. 881) it is important to know the beach users' preferences and perceptions to enhance tourism, manage the "natural resources: [...] and design beach environments according to users' need and desires". In addition, Duvat (2012) believes that the public can help in identifying issues related to safety and ecosystem sensitivity, which can improve the quality of the beach. As explained by Gore, (2007); Ariza et al. (2014) and Prati et al. (2016), including the beach users and stakeholders in the discussions,

makes it easier to implement something as they would have been involved from the beginning, thus maximising the effectiveness of the MPs.

Nevertheless, public participation may create other challenges, such as being time-consuming, expensive and requiring a lot of work which could end up delaying the process and implementation of legislation (Marzuki, 2015; Soriani et al. 2015). In addition, if not correctly managed, “participation can create new conflicts or escalate exiting ones” (Soriani et al. 2015, p. 144). Hence, a proper thought on how to approach public participation and at what stage of the process should also be taken into consideration.

2.3. Development of ICZM in Europe and the Mediterranean

The concept of ICZM emerged five decades ago in the United States with the implementation of the Coastal Zone Management Act (1972). Since then, ICZM has been widely studied and discussed (Cicin-Sain and Knecht, 1998; Meltzer, 1998; Kay and Alder, 1999; James, 2000; Gallagher, Johnson, Glegg, and Trier, 2004; Calado et al., 2007; Frampton, 2010; Roy et al., 2013; Soriani et al., 2015).

2.3.1. *Historical development of ICZM*

By the 1970s, the Council of Europe had already started working on resolutions to protect the coastline. Further details of how ICZM developed in Europe and the Mediterranean is shown in Table 2.1.

Table 2.1: A detailed chronological table of the development of ICZM both in Europe and the Mediterranean

Year	Description	Outcomes and Evaluation
1973	The Council of Europe concluded a resolution on the protection of the	“Urged the Governments to compile inventories of coastal resources and to promote integrated coastal planning and

	coastline (Resolution (73) 29).	ensure wildlife conservation in coastal areas” (Jewell, Roberts, and McInnes, 2000, p. 211).
1975	Creation of Mediterranean Action Plan (MAP)	It aimed to focus on the Integrated Coastal Area Management (ICAM), whereby it protects, controls and conserve the habitats and landscape in a sustainable manner (Planning Authority, 2002; UNEP/MAP, 2003a).
1976 - 1978	Barcelona Convention – The Convention for the Protection of the Mediterranean Sea Against Pollution	It was adopted between the European Community and the EU Mediterranean Member States and came into force in 1978 (UNEP/MAP, 2016).
1980	Establishment of the Priority Actions Programme Regional Activity Centre (PAP/RAC) under UNEP	Its objectives are to support the Mediterranean countries in managing their coast through the ICZM Protocol (UNEP/MAP, n.d.-b).
1983	The Council of Europe adopted the European Regional/Spatial Planning Charter	This Charter consisted of a document which provided the objectives of regional/spatial planning at European level (Council of Europe, 2020).
1986	European Commission (EC) communication to Council of Ministers on integrated planning of coastal areas COM (86) 571 -	It was concluded that the regions did not apply the Charter (Jewell et al., 2000).

1989	Coastal Area Management Programme (CAMP) was established under the Mediterranean Action Plan (MAP) (Shipman, Yves, and Charles, 2009).	<p>The main objectives of CAMP were to help Mediterranean coastal areas implementing ICZM at a local level as well as identify relevant strategies and methods. (PAP/RAC, 2005a; UNEP/MAP - PAP/RAC, 2015).</p> <p>These projects showed that problems were very similar between countries such as (1) projects were not followed up so its implementation was not monitored, (2) the coastal information system became outdated and/or removed from the system, so data and information were lost and (3) results were not used as a supporting element to national policies (UNEP/MAP - PAP/RAC, 2015). In addition, it was concluded that the implementation of the ICZM Protocol in the Mediterranean was still at its early stages given that coastal management"required external political and technical support, emulation and cooperation" (UNEP/MAP - PAP/RAC, 2015, p. 26).</p>
1992	United Nations (UN) Earth Summit of Rio de Janeiro	Coastal states had to set up an integrated coastal zone management strategy as per Chapter 17 – Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources – of the Agenda 21 (European Commission, 2019b).

1992 - 1994	The Council of Europe adopted the resolutions on ICZM	The integrated approach was considered essential in the management of coasts and advised the EC to propose actions in this regard (European Commission, 2019b).
1996 - 1999	The EC operated a Demonstration Programme on ICZM under COM (95) 511	During this period, 35 projects were funded to “look at the many inter-related biological, physical and human problems” (Commission of the European Communities, 2000). The results were included within the 2002 Recommendation, which “led to the development of the set of principles on which ICZM is based” (European Union, 2012, p. 6). Results showed that most of the problems were due to the absence of monitoring and controlling of legislation and lack of knowledge since; either stakeholders were not involved in the process, or communication was insufficient between the different responsible entities (Planning Authority, 2002). Therefore, in order to encourage collaboration amongst different entities within the Member States, the Commission presented the European Strategy for ICZM (Commission of the European Communities, 2000; Planning Authority, 2002)
2000	Based on the results from the Demonstration Program two	A Communication from the Commission to the Council and the European Parliament on “Integrated Coastal Zone Management: A

	documents were adopted.	<p>Strategy for Europe” (Commission of the European Communities, 2000);</p> <p>A proposal for a European Parliament and Council Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe (Commission of the European Communities, 2000).</p>
2000	Adoption of the Water Framework Directive (WFD) (2000/60/EC)	The aim of this directive is to reduce groundwater pollution and to monitor, protect and improve all water bodies up to one nautical mile from shore (Government of Malta, 2016b; UNEP/MAP - PAP/RAC, 2015)
2002	Council Recommendation on ICZM (2002/413/EC)	Each Member State had to develop the national strategies by the year 2006 to encourage a bottom-up approach as well as public participation. Additionally, a system to collect and disseminate information to the public on their coastal zone was to be developed. As part of the Recommendation, it was suggested that effective coastal planning and management should follow the eight ICZM principles. Although coastal management became a priority to all coastal countries, the former is still being considered as complicated to implement due to the coastal diversification (Sardá, Ávila, and Mora, 2005). In addition, it does not legally bind the Member State to “adopt ICZM as a

		policy instrument” (UNEP/MAP - PAP/RAC, 2015, p. 11).
2002	ICZM Principles	As outlined above, the Demonstration Programme identified eight sets of principles of ICZM which were included within the Recommendation. These were 1) broad holistic perspective, 2) long-term perspective, 3) adaptive management to ease changes, 4) local specificity of coastal zones, 5) working with the natural processes, 6) improving participation, 7) involving the relative stakeholders at all levels, and 8) the use of a combination of instruments (European Union, 2012). These principles were evaluated through the COREPOINT project as discussed further below.
2002 - 2003	Feasibility Study	This was undertaken by the Barcelona Convention Contracting Parties, whereby results showed that there was the need for a regional legal instrument, at both the technical and environmental levels. In 2003, the Contracting Parties entrusted PAP/RAC to organise the consultation process with experts and stakeholders to commence the process of drafting the binding document (Priority Actions Programme, 2018).
2003	EU ICZM Expert Group	This was set up to help members in the implementation of the 2002 Recommendation. In order to assess whether the countries were reaching their targets, the

		<p>working group launched the Working Group - Indicators and Data (WG-ID). The WG-ID recommended, (Breton, 2006, p. 1) “that Member States and Candidate Countries should adopt two sets of indicators:</p> <p>An indicator set to measure the progress of implementation of ICZM (the progress indicator)</p> <p>A core set of 27 indicators (composed of 44 measures) to measure sustainable development of the coastal zone (the sustainability indicators) ”.</p>
2004	The experts accepted the set of 27 sustainability indicators in 2004 on condition that these were tested and validated until 2006.	Tests were carried out in different countries, but only 40% of them participated in this. Therefore, the expert group encouraged the idea to embark on a project, which would help in testing these indicators at different scales (Breton, 2006; Marti, Lescrauwaet, Borg, and Valls, 2007).
2004	Regional Stakeholders’ Forum	Experts and stakeholders had the opportunity to discuss the feasibility results and propose recommendations and a way forward. Later on that year, a Working Group was established to prepare the text of the ICZM protocol (Priority Actions Programme, 2018). After multiple drafts of the document and various consultations with experts, the final draft of the protocol was drafted with

		the support of PAP/RAC (Koutrakis et al., 2011).
2004 - 2007	The DEDUCE (Assessment Model for the Sustainable Development of European Coastal Zones) project.	The DEDUCE project was funded under the INTERREG IIIC South programme. Its main objective was to test the 27 sustainability indicators that were proposed by the EU WG-ID and to develop guidelines and fact sheets on how to use such indicators; including using GIS to analyse and view the coastal environment state and to seek the option of a European regional information observatory (Marti et al., 2007). The project created a common methodology on how to measure indicators across all EU countries, identified the strengths, weaknesses and difficulties when collecting and analysing data through various reports and produced fact sheets showing the “benefits of a comparative analysis between and across different geographical levels” (Marti et al., 2007, p. 5).
2004 – 2008	COREPOINT project	The COREPOINT project was funded under the INTERREG IIIB program and involved North Western Europe countries namely France, UK, Netherlands, Ireland and Belgium. The scope of this project was to bring together different stakeholders to strengthen relationships between them and to discuss how to solve coastal issues and implement ICZM (Ballinger et al., 2008; Ballinger, Pickaver, Lymbery, and Ferreria,

		<p>2010). Online questionnaires were distributed to key experts and stakeholders to identify how the ICZM principles were being observed across North Western Europe countries. Results showed that the principles were understood and well adhered to but there were still issues with regard to the broad holistic approach, long-term approach and adaptive management (Ballinger et al., 2010). McKenna et al., (2008) also argued that even though the principles were there to integrate policies and activities, these did the complete opposite. As a matter of fact, McKenna et al., (2008) identified three problems: 1) without proper guidance on how to tackle conflicts, the principles were open to different interpretations; 2) they were not in any order of importance and 3) it could be understood that each principle was stand-alone, whereas all the eight principles were to be seen holistically.</p>
2005 - 2015	<p>Mediterranean Strategy for Sustainable Development (MSSD) 2005-2015 was adopted by the Contracting Parties to Barcelona Convention and the EU</p>	<p>One of the main objectives of this strategy was to ensure the sustainable development in marine coastal areas. Numerous developments have been observed since its adoption, such as higher profile for marine issues, the Protocol on ICZM in the Mediterranean, the Marine Strategy Framework Directive (MSFD), Maritime Spatial Planning (MSP), List of Specially Protected Areas of Mediterranean</p>

		Importance and marine areas in need of protection (UNEP/MAP, 2016).
2008	ICZM Protocol for the Mediterranean	The ICZM Protocol for the Mediterranean was adopted and signed by the 14 Contracting Parties (including Malta) at the Conference of the Plenipotentiaries in Madrid in 2008, but only came into force in 2011 after six ratifications were obtained (Shipman, Yves, and Charles, 2009; Santoro et al., 2014; Priority Actions Programme, 2018).
2008	The Marine Strategy Framework Directive (MSFD)	This Directive was adopted by the European Union and binds all the European countries to achieve Good Environmental Status (GES) within EU's marine waters by 2020. All EU countries are obliged to produce and keep up to date a marine strategy for their marine waters, which will then be reviewed every six years (European Commission, 2020c).
2009 – 2011	OURCOAST project	In 2009, the Commission launched the project OURCOAST. This involved a three-year project whereby its aims were to encourage different coastal areas that applied ICZM to share their experience with other countries. The main result from this project was the creation of the ICZM Database which contains, but is not limited to, good practice examples of successful coastal management around Europe, updated relevant policies, recommendations

		and a contact list of interested stakeholders (European Commission, 2019a).
2011	ICZM Protocol for the Mediterranean entered into force, becoming part of EU law.	By 2011, six countries ratified it, and by 2018, the number of countries increased to ten. (Priority Actions Programme, 2018). The main obligation of the protocol is that all contracting parties develop a common framework to promote integration and improve regional cooperation based on the EU ICZM Recommendation (Koutrakis et al., 2011). The protocol covers the Mediterranean Sea including the terrestrial site (to be determined by the party) up to territorial waters (12 nautical miles) (UNEP/MAP/PAP, 2008). One of the challenges that ICZM faces is to include experiences gained through bottom-up approaches (Shipman et al., 2009).
2010 - 2014	PEGASO (People for the Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast) project	After the ratification of the Protocol on ICZM, the EU co-financed the PEGASO project. The aim of this project was to support the implementation of ICZM in the Mediterranean by bridging “science and decision making” (Roy et al., 2013, p. 2) as well as to develop something similar for the Black Sea. Below are the outcomes of the project after various methods and tools were tested in different case studies (European Commission, n.d.-b).

		<p>i) "the design of an ICZM governance platform, to support the development of integrated policies in the Mediterranean and Black Sea basins,</p> <p>ii) the development of a spatial data infrastructure (SDI) for the two sea basins delivering harmonised datasets accessible through an Internet viewer,</p> <p>iii) the refinement of multi-scale tools and methods for integrated assessment (e.g. indicators to measure sustainable development of coasts and sea, coastal and marine ecosystem accounting, participatory methods, scenarios and so on").</p>
2012 - 2019	Action Plan for the implementation of the ICZM Protocol 2012 – 2019 was adopted by Barcelona Convention Contracting Parties.	<p>The three main objectives of this Action Plan are the following (Priority Actions Programme, 2018).</p> <ol style="list-style-type: none"> 1. Support the effective implementation of the ICZM Protocol at regional, national and local levels including through a Common Regional Framework for ICZM; 2. Strengthen the capacities of Contracting Parties to implement the Protocol and use in an effective manner ICZM policies, instruments, tools and processes; and 3. Promote the ICZM Protocol and its implementation within the region and

		promote it globally by developing synergies with relevant Conventions and Agreements.
2014	Maritime Spatial Planning Directive (2014/89/EU) came into force.	Similarly to the MSFD, this directive aims to support the development of both coastal and maritime activities and resources sustainably. Member States had to transpose it by 2016 and produce maritime spatial plans by 2021 (Santoro et al., 2014; European Commission, 2020).
2015	Assessment of the Coastal Area Management Programme (CAMP)	This was an assessment to “identify the benefits and added value as well as limitations of an ICZM approach and to propose policy recommendations for replicating successful examples at a larger scale” (UNEP/MAP - PAP/RAC, 2015, p. 1). Results showed that all the objectives of the individual projects were achieved by all participating countries even though the budget for the project was low. Nonetheless, the assessment identified some weaknesses such as: no continuation due to lack of commitment, hence there is no or limited monitoring and assessment. In addition, the bottom-up approach is not sustained unless there is a specific project which promotes it. Communication and dissemination of results between different countries is limited especially since CAMP projects were designed for that particular country (Shipman et al., 2009; UNEP/MAP - PAP/RAC,

		2015). Results also showed “that changing the way the coasts are managed or even to just start a process of coastal management is a difficult process that requires external political and technical support, emulation and cooperation” (UNEP/MAP - PAP/RAC, 2015, p. 26).
2016 – 2021	Mid-Term Strategy 2016-2021	It aims to provide guidelines on how to protect the marine and coastal environment of the Mediterranean as well as to contribute towards the sustainable development. One of its themes addresses ICZM and the need to involve the stakeholders to ensure proper participation and decision-making processes, hence contributing to effective management (UNEP/MAP, n.d.-a).
2016 – 2025	Revised Mediterranean Strategy for Sustainable Development (MSSD 2016-2025)	This was adopted by the Barcelona Convention Contracting Parties and the EU. “The strategy is an integrative policy framework and a strategic guiding document for all stakeholders and partners to translate the 2030 Agenda for Sustainable Development at regional, sub-regional and national levels” (UNEP/MAP, 2016, p. 4). The coastal areas and marine strategy lie on two main pillars: “strengthen implementation of and compliance with the Protocols of the Barcelona Convention and other regional

		policy instruments and initiatives supplemented by national approaches, Establish and enforce regulatory mechanisms, including MSP, to prevent and control unsustainable open ocean resource exploitation” (UNEP/MAP, 2016, p. 27).
2017	Conceptual Framework for MSP in the Mediterranean Sea	This document was adopted at the 20th Ordinary Meeting of the contracting parties to the Barcelona Convention and it aims to “facilitate the introduction of MSP [and] link it to ICZM, as well as to provide a common context to contracting parties for implementing MSP in the Mediterranean Region” (Ramieri et al., 2019, p. 277).

Table 2.1 showed the historical development and how ICZM evolved through the years. From this table, it can be concluded that although there has been improvement in managing the coasts, there are still problems such as lack of funds, cooperation between different countries and lack of monitoring and assessment which still need to be addressed.

2.4. ICZM in Small Island States

2.4.1. *Characteristics of a Small Island State*

SISs were defined as “having a small land area (10,000 km²) and a population of 500,000 people or less” at the Inter-Oceanic Workshop on Sustainable Development and Environmental Management of Small Islands (Tompkins, 2003, p. 2). SISs tend to be more vulnerable to changes such as a rise in sea level and/or climate change due to their size, limited resources, highly dense populations and the fact that they are surrounded by water (Nurse et al., 2001; Zheng et al., 2020) which makes them more

susceptible to sea-level rise (Wright, 2013). Given the limited scale of the islands, people are familiar with each other and as such it is often very difficult to implement new regulations and policies, as these are influenced by various connections. Additionally, SISs are subject to ethnic, racial and strong political divide (Calado et al., 2007). Zheng et al. (2020) argues that island limitations such as lack of resources make it harder for small islands to follow the principle of sustainable development. Calado et al. (2007), argue that SISs cannot follow the same Recommendation of ICZM as other countries with a larger land area. This is because they are small in size and their catchment area, currents and wave processes are influenced by the local context. Furthermore, the main problem that coastal areas face can be linked to “unregulated and poorly controlled land-based activities” (Calado et al., 2007). As such, Calado et al. (2007) suggest that any MPs created to protect the coast should be included with land-based MPs.

2.4.2. *SISs and tourism*

In SISs, the tourism industry is often considered to be one of the main economic activities (Wright, 2013). This is because tourists prefer coastal resorts for their sun, white sand and crystal-clear sea (Bruno and Duarte, 2013; Wright, 2013). As a result, developers continue to invest in seafront properties, which can be damaging to the coast by increasing the risks of beach erosion and sea-level rise, damaging the ecosystem. This is made even worse if there are no MPs, regulations and/or enforcement to limits such developments (Wright, 2013). For instance, in Cyprus “a strategy of protection of infrastructure combined with planned retreat would be effective and appropriate to local circumstances” (Nurse et al., 2001, p. 862). Other island states worldwide such as Barbados, Jamaica, St. Lucia and Singapore are already adopting similar methods (Nurse et al., 2001).

2.5. The nature of beaches and the need for management

Beaches are considered to be valuable both from an ecological, physical and social perspective but also from an economic point of view, the latter being mainly

attributed to tourism-related activities (James, 2000b; Lozoya, Sardá, and Jiménez, 2014; Azuz-Adeath et al., 2018). As a result, the recreational functions of a beach tend to be a priority for managers (Lozoya et al., 2014). Thus, having effective beach management is essential, especially given the complexity of the environment. This can be obtained through sound planning, and the use of appropriate management tools (Azuz-Adeath et al., 2018).

2.5.1. *Defining beaches*

Beaches are described as complex and dynamic systems (James, 2000a; Ariza, Sardá, Jiménez, Mora, and Ávila, 2008; Lucrezi et al., 2015; Semeoshenkova, Newton, Contin, and Greggio, 2017). From a physical point of view, a beach is made up of unconsolidated material which can be very mobile (Pethick, 1995). Due to this constant mobility, the profile of the beach is continuously changing; consequently, any studies should be spatio-temporal in order to take into account all possibilities (Boak and Turner, 2005). Similarly, the extent of a beach also varies, as this covers a wide area from the landward side of the beach, which can be a dune scarp or other feature up to a certain water depth where the movement of sediment is negligible (Williams and Micallef, 2009).

From an economic point of view, a beach also caters for different amenities and services such as food, leisure, tourism, coastal protection, habitat for flora and fauna and also recreation (Lucrezi et al., 2015; Prati et al., 2016). Thus, a beach can also be described as a multifaceted environment (Lucrezi, Saayman, and Van der Merwe, 2016). Such activities often result in the modification of the coastline to accommodate the increase in population and tourism. This then creates pressures and degrades the surrounding environment (Hinrichsen, 1999; Lucrezi et al., 2015; Semeoshenkova, Newton, Rojas, et al., 2017).

In summary, beaches are needed for their “recreational uses such as swimming, sunbathing or relaxing, shore protection from wave energy, mainly infrastructure and landscape, natural scenery and ecological reservoir with a huge emphasis on conservation” (Botero and Hurtado, 2009, p. 134).

2.5.2. Concepts of beach management

Beach management often focuses on how to reduce flooding and erosion risks to the hinterland (James, 2000; Frampton, 2010). However, various authors (James, 2000a; Lozoya et al., 2014; Sardá et al., 2015) explain how beaches are an interlinked system, where the physical, ecological and socio-economic systems interact with each other (Figure 2.2). Nevertheless, little importance is given to the ecological and environmental features of the beach and managers usually prioritise recreation over the protection of other functions of a beach (McKenna, Williams, and Cooper, 2011; Lucrezi et al., 2016). In addition, “during the last ten years [there has not been] a substantial improvement in beach management processes [in the Mediterranean], the new environmental policy is rarely applied and a deep gap is found between the theory of environmental policy and the practice of environmental management” (Sardá et al., 2015, p. 3).

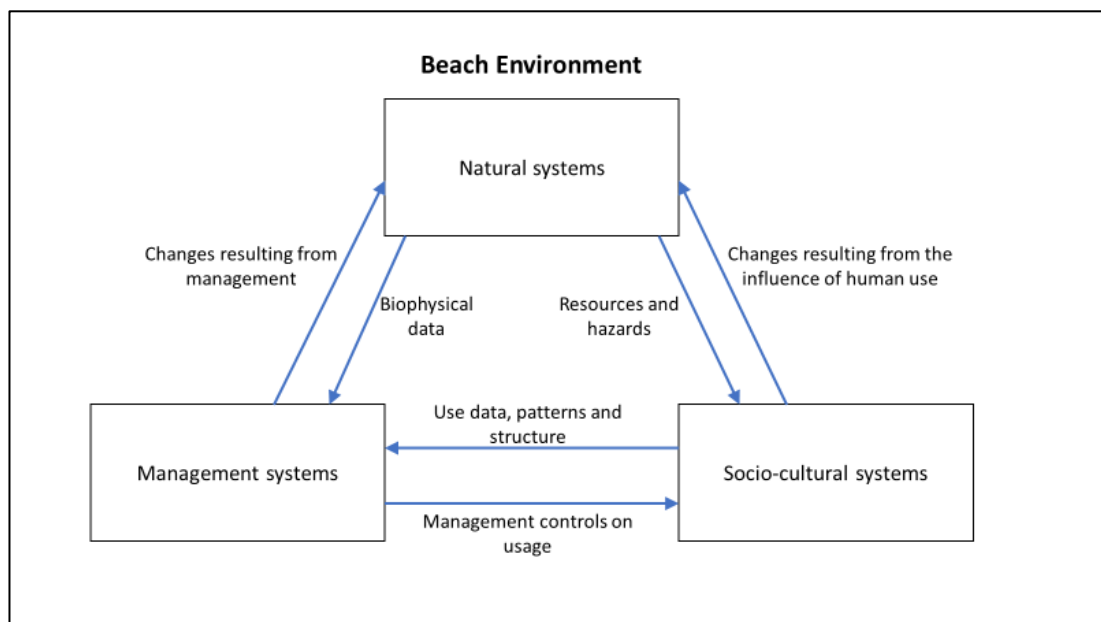


Figure 2.2 The beach environment model. (Source: Modified from James, 2000)

Quality criteria or performance awards (e.g. Blue Flag) are being used by managers to promote the beach for recreational purposes and especially to satisfy tourists' demands (Lucrezi et al., 2015, Sardá et al., 2015; Lucrezi et al., 2016; Roig-Munar, Fraile-Jurado, and Peña-Alonso, 2018). Consequently, managers tend to focus on

certain aspects of the beach, leaving other important things such as the beach ecosystem to degrade (Ariza, Jiménez, and Sardá, 2008; Sardá et al., 2015; Lucrezi et al., 2016). In some cases, the management of beaches is fragmented amongst different sectors, so that responsibilities are unclear and there is a lack of communication (Ariza, Sardá, et al., 2008; Sardá et al., 2015). In addition, according to Ariza, Jiménez, and Sardá (2012, p. 443), “the lack of contributions by certain disciplines (e.g.: social sciences) to beach management studies has kept researchers from understanding important coastal processes”. Botero et al. (2013) suggest that beach managers should first attempt to understand what the locals’ necessities are. For instance, a study on beach users’ preferences that was carried out by Botero et al. (2013), showed that Europeans preferred to have a safe beach and chose that particular beach for its scenery, whereas the Caribbeans chose a beach based on its proximity. Hence, it is very important to include beach users’ preference and insights in beach MPs (Pereira et al., 2003; Botero, Anfuso, Williams, Zielinski, et al., 2013) since by integrating the economic and physical aspect in the plans, the latter have a higher chance of being accepted by the wider public and policymakers (Micallef, 2002).

2.5.3. *Defining beach management*

As explained in Section 2.5, beaches are complex systems as they include multiple aspects and functions such as physical, biological, conservation, economic and social. Hence, all aspects need to be incorporated into an integrated beach management approach (Lucrezi et al., 2016). According to Williams and Micallef (2009, p.2), “it should be axiomatic that effective beach management fulfils the following condition, first postulated by Sauer (1963) with reference to landscapes, namely the integration of the physical environment – the fundament, with the cultural (anthropogenic) environment – that can be viewed as the superstructure”.. Subsequently, there have been various academic debates on beach management and what that should entail.

For instance, Bird (1996) discusses that the demands of the beach users should be a priority in beach management and can be met by improving recreational activities, facilities and coastal protection, whereas James (2000) describes beaches as

multidimensional environmental systems, which include the natural, socio-cultural and management systems as well as anthropogenic activities. Other aspects such as data on the past and current status of the beach (Boak and Turner, 2005) and information on political and socio-economical aspects (Williams and Micallef, 2009) should also be included in a beach MP. Additionally, Frampton, (2010) argues that since beaches are mainly important for their economic benefits, MPs should also include information on their safety and amenities.

Other studies such as those by Roca and Villares, (2008), Botero and Hurtado, (2009) and Lozoya, Sardá, and Jiménez, (2014), emphasise that public and beach users' participation and engagement are important. This is because their perceptions and preferences can be used to sustain a bottom-up management approach, and their recommendations can also be included in the policy. Apart from the public, Ariza, Lindeman, Mozumder, and Suman, (2014) and Prati et al. (2016) also suggest the participation of the stakeholders' perspectives in MPs, since their knowledge and experience are fundamental.

Hence, to have an integrated beach MP, managers should include the physical, biological, cultural and socio-economic aspects as well as public, beach users' and stakeholders' perspective. In addition, when managing a beach, it is important that managers also take into consideration the surrounding coastal area, as anything that happens within this area will probably also affect the beach (Gore, 2007; Williams and Micallef, 2009).

2.5.4. Management strategies

Micallef and Williams (2002) summarise the key concepts of beach management of various authors such as Simm et al (1995); Micallef (1996) and Williams and Davies (1999), thus:

- a. To have a long-term MP, there needs to be a comprehensive knowledge of the natural processes, the prospective management approach as well as the importance of the resource in terms of socio-economic aspects,

- b. To identify coastal processes such as the source of the sediment, its movement and its deposition on the beach. This will help managers to determine the most effective approach to safeguard the beach,
- c. To have reliable and consistent baseline data on the coastal processes as well as a long-term monitoring plan,
- d. To use adequate methods and expertise to solve problems in a timely/costly manner,
- e. To introduce regulations and enforcement and also to identify the responsibilities of each entity.

Following the key concepts of beach management, Williams and Micallef (2009) suggest that in order to achieve a long-term beach MP, there is the need to collect not only information on the physical and environmental characteristics of the beach but also on the socio-economic aspects. Furthermore, they also stress the importance of integrating the beach management plan with other coastal related plans to have an integrated approach.

In practice, managers often tend to take decisions ad hoc, hence, Micallef and Williams, (2002); PAP/RAC, (2007) and Williams and Micallef, (2009) describe that the key components to achieve a long-term effective MP are to:

- a) examine the existing condition to identify any current problems,
- b) plan how to solve them and what procedures to undertake,
- c) manage what has been discussed in the planning phase and start implementing the actions needed, and
- d) monitor the outcomes and determine whether the MP was effective or not.

In addition, Jensens' 1978 study (cited in Micallef and Williams, 2002) described the five-dimensional elements to beach management which are:

- a) Substantive dimension – this will determine whether there is a need to change something. This is usually done through questionnaires and cross-checking with local legislation/guidelines,

- b) Spatial dimension – this will consider issues such as cross-boundary problems,
- c) Temporal dimension - it is important to determine the historical development of the beach and its usage to determine if the problem is short/long term,
- d) Quantitative dimension – beaches are used for multi-purposes functions (recreational/industrial, etc.), thus it is important to collect quantitative data, and
- e) Qualitative dimension – can determine the beach users' needs and perceptions.

By following the above strategies, a beach manager should be able to have an effective long-term beach MP. However, one element that is missing is the identification of stakeholders and their interest and aspirations for the beach. These are needed to achieve a holistic approach (Ariza et al., 2014; Prati et al., 2016; Roca and Villares, 2018).

Gore (2007) describes the importance of knowing the aims and objectives of the beach MP to help managers in identifying which method to use. However, Gore's (2007) study of the British Virgin Islands, which was based on the key components of beach management by Micallef and Williams (2002), explains that objectives can be changed from time to time according to needs and, as such, beach MPs have to be revised periodically. In addition, Micallef (2003b) highlights the importance of obtaining baseline data on both the environment and physical factors to identify and address conflict. Due to the complex environment of beaches, none of the beach management plans fits all case studies, thus each proposal should be adopted/modified according to that particular beach (Micallef, 2003b; Gore, 2007; Zielinski and Botero, 2019).

Sorensen (1997), Phillips and Jones (2006) and Gore (2007) argue that there is a lack of information on the effectiveness of beach MPs, hence managers cannot determine whether certain methods are useful when applied on beaches. Based on the 2007 study, Gore (2007) proposed a set of indicators and suggested a responsible party so

that the latter can then provide a standard procedure to ensure that data are collected and monitored regularly. Gore (2007) also suggested that the parties would then be responsible for submitting a non-technical report to the leading authority and should include the methodology undertaken, results obtained, major concerns and how can these be mitigated. These reports would then be available to all the other stakeholders as well as the public.

2.5.5. Beach awards, classifications and models

Different proposals were put forward to try and manage beaches in an integrated approach (Lucrezi et al., 2016). For instance, award schemes such as the BF set out criteria (Lucrezi et al., 2016) to be able to collect data, analyse it and compare it with other sandy beaches. This will then determine the most effective beaches not only locally but internationally (Ariza, Jiménez, et al., 2008; Cervantes and Espejel, 2008). However, such schemes tend to focus on certain aspects of the beach such as accessibility, facilities and services, but fail to address issues like the spatio-temporal aspect and beach processes (Lucrezi et al., 2016; Roig-Munar et al., 2018). Other schemes such as the European Coast Watch Survey and the UK's Good Beach Guide of the Marine Conservation Society tend to focus on water quality criteria (Micallef and Williams, 2002). Section 2.5.5.1 describes the BF Award since this is the main management tool that is currently being used in the Maltese Islands.

2.5.5.1. Blue Flag Award

In 1985, France started awarding its best beaches with a BF to promote the sustainability of the environment (Mir-Gual, Pons, Martín-Prieto, and Rodríguez-Perea, 2015; Roig-Munar et al., 2018; Zielinski and Botero, 2019). This was further developed by the EC in 1987 where it launched the BF programme under the auspices of the Foundation for Environmental Education in Europe (FEEE) (European Commission, 1991). In 2001, the BF was extended to non-European countries and the Foundation changed its name to the Foundation for the Environment (FEE), thus becoming an international award (Lucrezi et al., 2015). "The Blue Flag is an international beach award set up to provide indicators of quality in environmental

education and information, water quality, environmental management, and safety and services” (Lucrezi et al., 2015, p. 211). The beach proposed for the award would have to achieve all the 33 criteria that fall under the four classes (Foundation for Environmental Education, 2018). Such an award is only given for one season, after which the beach would have to reapply for the following season (Creo and Fraboni, 2011; Lucrezi et al., 2015).

BF has become one of the most widely accepted environmental management tools worldwide (Roig-Munar et al., 2018). However, it has been criticised for not distinguishing between the different beaches and for not considering the beach itself, as it concentrates mainly on the water quality of the beach and health and safety aspects. In addition, this is a top-down initiative and it does not take into consideration the beach users’ point of view (Morgan, 1999; Micallef and Williams, 2002; Roca and Villares, 2008; Williams and Micallef, 2009; Lucrezi et al., 2015; Lucrezi et al., 2016). Furthermore, the BF was criticised for not giving much importance to the ecological and environmental aspects, but rather, it concentrates on the services and facilities for the beach users (Ariza, Sardá, et al., 2008; Mir-Gual et al., 2015; Zielinski and Botero, 2019). Lucrezi et al. (2015) agree with previous research and argue that although the BF is supposed to provide a “balance between environmental management and tourism attraction, this balance is not warranted” (Lucrezi et al., 2015, p. 212). The BF tool should be added to other management tools such as the physical characteristics of the beach and the perceptions and attitudes of beach users and stakeholders (Ariza, Sardá, et al., 2008; Lucrezi et al., 2015; Klein and Dodds, 2018 and Zielinski and Botero, 2019).

2.5.5.2. Beach classification

As mentioned in Sections 2.5 and 2.5.2, beaches are complex, unique systems. For instance, urban areas attract different people than rural areas, thus beaches cannot be considered and managed the same way (Zielinski and Botero, 2019). Beach classification can be used to categorise the different beaches, but “information about beach classification as a tool for management is scarce” (Botero and Hurtado, 2009, p. 124). Authors such as Botero and Hurtado (2009) classify beaches into intensive

(focusing on recreational experience), shared (having multiple coastal activities concurrently), ethnic (located in local/native areas) and conservative (which focuses on the quality and protection of the environment). These depend on the beach user density, type of infrastructure, Code of Conduct, coastal activities and distance from habitable areas. Conversely, Williams and Micallef (2009) classify the beaches into remote, rural, village, urban and resort, based on the type of environment, accessibility, accommodation, facilities and safety equipment. For this research, the classification for the Maltese Islands beaches developed by Zammit Pace, Bray, Potts, and Baily, (2019) and based on the scheme produced by Williams and Micallef, (2009) will be used. Such a classification was “simplified and modified slightly for Malta, where distances are short and estimations of remoteness are relative” (Zammit Pace et al., 2019, p. 219). The scheme classifies the beaches into five categories as explained in Table 2.2 below:

Table 2.2 Beach Classification for the Maltese Islands based on the modified version by Zammit Pace et al. (2019):

Remote beaches	Situated in a rural area and can only be accessed either on foot or by boat. There are no services such as parking facilities, lavatory amenities, restaurants etc.
Rural beaches	In proximity to villages or urban areas and have some facilities such as parking space, lavatory amenities, litter bins etc.
Village beaches	Located near urban areas which have a small population and services such as shops, church, and other facilities.
Urban beaches	Situated within or adjacent to an urban environment, have large populations and various facilities and amenities such as schools and banks.
Resort beaches	Generally linked to a lodging in the vicinity and are private. The beach is self-contained and has some facilities.

2.5.5.3. Beach carrying capacity

Identifying the density of beach users should be another management tool to control beach users (Botero and Hurtado, 2009). The tool is dynamic, given that the number of people on a beach differs due to seasonality and preferences (Gore, 2007; Silva and Ferreira, 2013; Corbau, Benedetto, Congiatu, Simeoni, and Carboni, 2019). Due to such changes, the carrying capacity should “not find a predetermined maximum number of visitors, but [should] provide a strategy [where] growth is managed in a way that quality of life of residents and the quality of the visitor experience remains high” (Gore, 2007, p. 741). Additionally, Pereira Da Silva (2002) distinguished between the physical carrying capacity, which is the actual number of people that a beach can take, and the social carrying capacity, which reflects people’s perception of crowdedness (Giné, Rota, Perez Albert, and Cervero, 2018). According to Pereira Da Silva (2002); Marin et al. (2009) and Silva and Ferreira (2013), social carrying capacity is more important than the physical one, as users will identify what level of crowd is acceptable and what is not. As a result, managers will be able to “maintain the attractiveness of a tourist destination in its phase of maturity in order to avoid its decline” (Marin et al., 2009, p. 274). Giné et al. (2018) developed the Beach Crowding Index (BCI) to evaluate the social carrying capacity of susceptible beaches and avoid overcrowding. However, Giné et al. (2018) argued that there are other factors affecting the quality of the beach and users’ perception. Hence, the BCI should be used in conjunction with other approaches to achieve effective beach management.

2.5.5.4. Bathing Area Registration and Evaluation (BARE)

The BARE model classifies the bathing area into five beach types: remote, rural, village, urban and resort beaches (Cervantes and Espejel, 2008; Williams and Micallef, 2009). Then it assesses the quality of the beach through five parameters: water quality, facilities, litter, scenery, and safety (Williams and Micallef, 2009; Lucrezi et al., 2016). Based on the scores obtained, it rates the bathing area on a four-scale system and finally “it provides subsequent analysis of ratings scored for the five parameters , using 1-5 classification” (Williams and Micallef, 2009, p. 196), where 1

means that the bathing area is not safe and 5 means that it has four or five of the parameters which scored high and so is safe. Even though PAP/RAC, (2005b) recognised this as a tool to be used at all levels, it was suggested to increase the number of criteria (such as ecology and beach erosion) to be more flexible. In addition, according to Ariza, Sardá, et al. (2008, p. 61), such models “do not consider managerial issues such as management coordination, steady improvement, or emergency plans”.

2.5.5.5. Bathing Area Management Model (BAMM)

Together with the BARE model, the BAMM was also developed (Williams and Micallef, 2009). This involves seven steps: 1) policy definition, 2) planning, 3) data gathering where the beach register could be used, 4) analysis of the data gathered, 5) evaluation and the reviewing of the results gained in Point Four. The authors also suggest the use of BARE to identify the priorities of that area. Then the model continues with 6) implementation of the MP through a pilot study which is based on the priorities that are found in Point Five and end with 7) monitoring and control which allows for the revisions or implementation of the MP.

2.5.5.6. Other models

Various authors have developed other models to manage beaches, some of which are:

- a) Environmental Function Analysis – This model assesses various sites concurrently by evaluating environmental, development and economic indicators (Amyot and Grant, 2014; Lucrezi et al., 2016). However, Amyot and Grant (2014) argue that the model needs environmental data which sometimes are not available. Additionally, it has many indicators, some of which do not apply to each case study.
- b) Integrated Beach Value Index (IBVI) – This index incorporates beach users’ perceptions, descriptive beach indicators and indicators of economic value (Cervantes and Espejel, 2008; Lucrezi et al., 2016).

- c) Index of Environmental Quality in Tourist Beaches – This index was developed to “assess the environmental quality of tourists beaches” (Lucrezi et al., 2016, p. 2) by evaluating 30 environmental criteria (Botero, Pereira, Tosic, and Manjarrez, 2015).
- d) Beach Evaluation Index – This is similar to the Integrated Beach Value Index. It incorporates the beach description, beach users’ perception and the monetary indicator (Lucrezi et al., 2016).

Even though there are a lot of schemes and indices as outlined in this section, they fail to address the multi-cultural environment, temporal analysis as well as detecting any changes in the beach. Moreover, it is argued that in order to obtain maximum performance, these indices should be used with other models (Lucrezi et al., 2016).

2.6. Summary

Chapter Two has examined the concepts, principles and practice of Integrated Coastal Zone Management (ICZM) at different levels: Global, European, Mediterranean, and Small Islands States. Section 2.2 defined coastal terms and highlighted key management issues as well as describing the process of ICZM. It is of utmost importance to involve the public and stakeholders to have a consolidated and sustainable approach to the management of coasts. Section 2.3 examined the evolution of ICZM in Europe and the Mediterranean and outlined the different policies and EU projects that were related to ICZM. It was noted that even though there were various projects and strategies to implement ICZM throughout the years, the latter is still challenging either due to lack of funds, monitoring and/or assessment. Section 2.4 provided further insights into the implementation of ICZM in SISs and explained how difficult it is for such islands to adopt to this approach in view of their small coastal area and its different characteristics.

This was followed by Section 2.5, which assessed the literature related to the concepts of beach management. It discussed the various definitions related to beaches and their management and studied the concepts and strategies of beach

management. This section explored the various awards, models, tools, and guidelines used for managing the beaches. It is now important to contextualise this in relation to the Maltese islands specifically. This is addressed in the following chapter which investigates the historical and current beach management practices in place.

Chapter Three: Historical and Current Beach Management Practices in the Maltese Islands

3.1. Introduction

Chapter Three focuses on the historical and current beach management practices in the Maltese Islands. The chapter is divided into three major parts. The first part discusses the historical overview in three different periods: 1) after Malta gained independence, 2) the period between independence and Malta's accession to the EU, and 3) after Malta joined the EU. The second part focuses on the major issues that Malta's beaches are facing. Finally, the last section discusses current beach management practices in the Maltese Islands.

3.2. Historical overview

Over the centuries, due to its strategic position in the middle of the Mediterranean, Malta has been under the rule of various powers such as Carthage, the Normans, the Order of St. John and France. In 1802 Malta became a colony of the British Empire and served mainly as a military base, hence their main interest was the ports. During the late 1950s the Maltese political parties started working towards independence, which was achieved in 1964 (Oglethorpe, 1985).

This thesis focuses on the time after Malta achieved independence, as prior to that the Maltese were not involved in management issues as the focus was on ports and how these could be used for military purposes. This section is divided into three major timeframes:

- a) from 1964 to 1992 – this is from when Malta gained its independence up until the establishment of the Planning Authority (PA),
- b) from 1993 to 2003 – this covers the period after the PA was formed until Malta gained EU accession, and
- c) after 2004 – this recounts what happened after Malta became one of the EU Member States.

3.2.1. 1964 – 1992

After 1964, the Maltese government adopted a *laissez-faire* attitude resulting in a lack of building planning and management across the island. Subsequently, structures were being built on “already strained existing infrastructure” (Oglethorpe, 1985, p. 26). Also, coastal developments especially those related to tourism, were usually found where accessibility to the sea was easy (mainly low-lying areas and/or sandy beaches), increasing pressures in already built-up areas (MEPA, 2010). As an incentive to boost the tourism industry during the 1980s, the government gave up a substantial part of the coast. This resulted in most of the Sliema promenade being privatised and this also happened in other coastal localities (Figure 3.1) (Planning Authority, 2002).



Figure 3.1 Coastal development in Sliema (Source: Author, 2020)

An increase in tourists resulted in high pressures on the Maltese Islands and the resulting problems included (Planning Authority, 2002):

- Insufficient water resources, thus many hotels had to use reverse osmosis. However, hypersaline water was being discharged along the beach, impacting on the benthic habitat;

- Beach concessions were issued, with retailers occupying public shorelines with umbrellas and deckchairs, leaving only limited space at the back of the beaches free to the public;
- An increase in waste and sewage, so much so that in the 1990s the infrastructure could not cope with it, resulting in beaches being closed off due to contamination;
- An increase in infrastructure around the coastline as well as roads constructed at the back of beaches. This led to multiple erosions and therefore degradation along sandy beaches (Planning Authority, 2002). It was estimated that in 1990, there were “up to 14 beaches [that] were undergoing erosional or other sand losing processes” (UNDP, 1991, p4. as cited in Micallef, 2002). Additionally, between the 1980s and early 1990s, sand was constantly being taken from Għadira Bay and placed on other eroded beaches. However, given the fact that there were no appropriate studies, all the sand placed was eroded during the winter season (Planning Authority, 2002).

Consequently, in 1990, the Structure Plan (SP) was drawn up to provide specific guidance on the Maltese Islands’ land use. This was approved two years later by the Parliament (Planning Authority, 1997). Subsequently, the Environment Protection Act (EPA), and the Development Planning Act (DPA) were adopted in 1991 and 1992 respectively. Following these two Acts, the PA³ was established in 1992 with the scope to implement, monitor and evaluate the policies found in the national SP (Planning Authority, 1997).

The SP contained only three policies that were explicitly related to Coastal Zone Management (CZM) (Table 3.1), though some 50 other policies also had an impact on the coast either directly or indirectly (Planning Authority, 2002).

³ As of 1st March 2002, the PA and the Environment Protection Department were merged to form the Malta Environment and Planning Authority (MEPA). The Environment Protection Department became the Environment Protection Directorate (EPD) within MEPA. However, in April 2016, MEPA was demerged once again to become the PA and the Environment and Resources Authority (ERA).

Table 3.1: The three policies related to the coast and comments made by the PA

Policy (Ministry for Development of Infrastructure, 1990, p. 119)	Comments by Planning Authority, (2002)
<i>“CZM 1: A professionally staffed, and adequately resourced Coastal Zone Management Unit will be established as a matter of high priority</i>	Focused more on the administrative part of how to implement coastal management, rather than emphasising the development process.
<i>CZM 2: A Subject Plan will be prepared for coastal zone management, to include both conservation of this important resource, and improved facilities for its enjoyment by the public</i>	
<i>CZM 3: Public access around the coastline immediately adjacent to the sea or at the top of cliffs will be secured”</i>	Gave more importance to how the coast should be made accessible to the public. However, given the fact that there was no proper definition of the geographical boundary, this was subject to many escape clauses, sometimes leaving only a small pathway as access.

Conversely, it had five Rural Conservation (RCO) policies that focused on sandy beaches (Ministry for Development of Infrastructure, 1990, p. 109):

“RCO 16: No form of permanent construction will be allowed in sandy coastal areas and existing constructions will be removed wherever practicable. The removal of sand from sandy beaches is prohibited, and the extension and creation of sandy beaches for recreational use will be encouraged. Sandy beaches include shallow inshore seabed. All beach and seabed enhancement will be the subject of Environment Impact Analyses

RCO 17: Overnight camping on sandy beaches and any camping on sand dunes will be prohibited, and access of vehicles to sandy beaches and dune areas will be prevented

RCO 18: Without prejudice to any other policy or regulation protecting dune areas, the Planning Authority will actively prevent the removal of sand-binding vegetation from such areas

RCO 22: Positive action will be taken to prevent further loss of sandy beaches, sand dunes, coastal clay slopes, soil, and cliff edges.

RCO 23: Developments connected with the construction of coastal defences, the enlargement of existing beaches, and the creation of new ones will only be allowed following a scientific study by competent persons of their short-term and long-term environmental, social, and economic impact, and provided that it is clearly demonstrated that there is a real need for such development and that the benefits outweigh any negative impacts. ”

According to the Planning Authority (2002), these five policies had been quite effective since they were very detailed and so development applications could be easily managed when processing. Nonetheless, they were also addressed in other policies and this may have led to confusion. In addition, it was mentioned that by the time the SP was implemented in 1992, overdevelopment near the coasts had already taken place, leaving few natural areas, whereas the issue of beach facilities was not mentioned (Micallef, 2002).

Before the SP, there was no entity/authority who was responsible for land use, not to mention a “legislative/policy infrastructure for the development of beach management guidelines” (Micallef, 2002, p. 42). Though the SP recommended the need to have a MP for the coastal zones this was not established, mainly due to the various entities which were involved in the management of the coast often leading to confusion as to who was responsible for what and creating duplication of work (Micallef, 2002; PAP/RAC, 2005a; MEPA, 2010).

According to Micallef (2002), the development of the Freeport in 1991 was the first attempt at beach management by using most of the dredged material for beach nourishment on adjacent beaches. However, due to the cost of transporting the sediment and not enough time to conduct a scientific survey, the material was dumped on the nearest beach. Pretty Bay, which is located circa 600 metres away from the Freeport, was replenished with this sandy material (Micallef, 2002). Even though this beach is considered to be the largest sandy beach in the south of Malta, its beach replenishment was criticised due to the lack of time to conduct scientific surveys and baseline studies (Micallef, 2002; Farrugia, 2017). Indeed, this resulted in some negative effects such as loss of sediment in adjacent areas as well as damage to the seagrass due to a change in sediment budgets and hydrodynamics (Environment Protection Department, 1999; Micallef, 2002).

3.2.2. 1993 – 2003 (*prior EU Accession*)

3.2.2.1. Structure Plan review

Due to the rapid economic growth taking place on the Islands, the then MEPA was obliged to review and update the SP every 20 years to cater for new issues that might have emerged or were likely to emerge in the future under the DPA (1992) as amended in 2001 (PAP/RAC, 2005a). As such, monitoring reports, public attitude surveys and various topic papers including the Coastal Strategy Topic Paper were prepared to identify issues in the various sectors and then be addressed in the new review (PAP/RAC, 2005a).

3.2.2.2. Monitoring Reports (1990 – 1997)

Two monitoring reports covering the period between 1990 – 1995 and 1996 – 1997 respectively were drawn up. The objectives of the first report were to measure the progress being carried out in the SP, identify and analyse any gaps within the policy or other areas which might involve further re-assessments as well as “identify key social and economic trend which may imply a need for policy review” (Planning Authority, 1997, p. iv). The report also mentioned that a coastal zone subject plan

was in the pipeline and that this would help in collecting new data on the marine environment (Planning Authority, 1997). The objectives of the second report were the same as the first monitoring report, but it covered the period between 1996 and 1997 and was based “on the analysis of progress identified during the previous period” (Planning Authority, 1999, p. i). Several issues within the SP with regard to the coastal environment were observed in both reports, as outlined in Table 3.2.

Table 3.2: Results from both the monitoring reports (1990 - 1997)

Monitoring report 1990 – 1995 (Planning Authority, 1997)	Monitoring report 1996 – 1997 (Planning Authority, 1999)
Lack of coordination amongst different government departments and other entities involved in coastal management and conservation.	Still applied
No policy and management frameworks were developed to provide appropriate coastal protection, especially regarding the sandy beaches. Furthermore, existing policies did not provide adequate coastal protection.	The SP was rarely used as guidance by the relevant authorities.
Coastal accessibility was also one of the subtle issues. Even though the SP’s goal was to keep the coastline free to the public, this turned out to be very difficult in those cases where building permits or licences had already been issued.	Coastal access to the public remained an issue even though in “1997, the PA drafted a set of guidelines on coastal access in order to elaborate and clarify policy [on the illegal developments]” (Planning Authority, 1999, p. 126)

Lack of up-to-date coastal data, which in turn resulted in a lack of monitoring and enforcement.	Still applied
Urban coastal areas that were subject to development did not have a protection policy as rural coastal areas. Thus, they were under constant pressure from various developments such as beach concessions and the tourism industry.	Still applied
Illegal structures located on and around the beaches have not been removed as per RCO 16 of the SP.	Still applied

Nevertheless, in the second report some improvements were observed such as (1) there was significant improvement in establishing coordinating committees and contact persons for relevant subjects; (2) the Coastal Zone Management Unit was established; (3) progress was made with regard to large developments being restricted on the coast and which are outside development zones; and (4) sites which were susceptible to erosion were scheduled by the PA (Planning Authority, 1999). Additionally, it was planned that; (1) a Coastal Zone Management Subject Plan document would be produced; (2) funds were obtained for a Coastal Area Management Programme (CAMP) project (further information in Section 3.2.2.4) and (3) beach management would be introduced (Planning Authority, 1999). After some issues on who would be responsible, this was set up under the Malta Tourism Authority (MTA) (Dingli, 2019).

3.2.2.3. Public Attitude Survey (PAS) (1999)

In 1999, the PA conducted a Public Attitude Survey (PAS) in order to scrutinise public perception of the land use issues and help review the SP (Briguglio and Gauci, 2001).

This was a postal survey and targeted 15, 000 people, who represented “5% of each age cohort and 5% of the population of each locality of the Maltese Islands” (Briguglio and Gauci, 2001, p. 6). In addition, various incentives such as lottery tickets and free postal service were provided to increase the number of replies. Nevertheless, only 38% of the sample (5, 719) replied (Briguglio and Gauci, 2001).

From this survey, it was observed that the majority (60%) preferred going to a sandy beach either on a Sunday afternoon or on a weekday afternoon. However, the questionnaire failed to explain why this was the case. In another question, almost 80% of the respondents did not agree that there were suitable facilities on beaches (Briguglio and Gauci, 2001). Nevertheless, once again, the survey failed to further elaborate on this question. The report concluded that the Maltese coast needs to be protected both as a recreational resource as well as for its environmental purposes. In addition, there should be more regulations, monitoring, and control in this regard (Briguglio and Gauci, 2001; Planning Authority, 2002; UNEP/MAP, 2003a).

3.2.2.4. Coastal Area Management Programme (CAMP) – Malta (2000 – 2002)

In 2000, a two-year project named CAMP Malta was launched under the Mediterranean Action Plan (MAP) through the Priority Actions Program - Regional Activity Centre (PAP/RAC). It was coordinated and implemented by the then national EPD agency within MEPA (UNEP/MAP, 2003a). This project was based on a much broader aspect of coastal management and beach management was embedded within it. CAMP Malta was initiated to identify coastal issues in Malta, with a specific focus on the north-western area, in order to address them sustainably as well as support the efforts to safeguard the environment. This was the first of its kind to try and amalgamate the different sectors related to coastal activity in the Maltese Islands (Planning Authority, 2002; UNEP/MAP, 2003a).

This project used the “bottom-up” approach, where both the public and stakeholders had the opportunity to show their concerns and propose their ideas on how to resolve the conflicts amongst them (UNEP/MAP, 2003a). Also, pressures and impacts

were categorised under three headings: functional gaps (including any gaps that have an impact on coast), spatial gaps (related to a particular area) and emerging issues (including both technological and geopolitical issues). The main issues relevant to beaches that were identified during this project were (UNEP/MAP, 2003a):

- Coastal management was divided between various entities (sectoral approach). This often led to multiple problems and conflicts as well as lack of communication between different stakeholders;
- There was no single management body responsible for coastal management;
- No clear definition of coastal zone created problems especially with the boundary of where a coast starts and where it ends;
- Misleading perceptions and little knowledge of the coastal areas;
- Bathing water quality was not up to standard;
- The need for more management and enforcement through environment wardens;
- Lack of public participation and more of a 'top-down' approach. UNEP/MAP suggested holding meetings with the stakeholders and users to involve them in the discussions.

The following were suggestions and recommendations that emerged during the CAMP project (UNEP/MAP, 2003a):

- To regulate activities that are near cultural resources, especially those located underwater, to protect the latter;
- To tackle any related touristic activities that concern the coastal area (such as privatisation of beaches, protection of sandy beaches from development and dive sites) in subsequent projects;

- The importance of having small car parks near the coast for better accessibility. However, it also stated that “the policy of road building adjacent to the coastline may also need to be revised, since roads could form barriers to the movement of sediments and flora and fauna” (UNEP/MAP, 2003, p. 60). The latter was also a problem with promenades and belvederes, and so, ecological corridors were to be given importance;
- To set up a coordinating body to regulate the coastal zone;
- To ensure a bottom-up approach: public and stakeholders’ participation is crucial. Stakeholders should be identified at the beginning of every project, to be involved in all stages and be able to provide their opinion and expertise;
- To have a central database system where data are stored and readily available to the sources. This is still at an early stage under the INSPIRE Directive which is being managed by MITA (Government of Malta, 2020c);
- To “protect existing sandy beaches and low-lying rocky shoreline within popular bathing areas from development” (UNEP/MAP, 2003a, p. 56);
- To take into account local and tourist beach users’ behaviour when managing beaches.

3.2.2.5. Coastal Strategy Topic Paper (2002)

During the SP review, the Coastal Strategy Topic Paper was written based on three objectives: (1) to identify the status of the coast, (2) to determine the effectiveness of coastal-related policies and (3) to highlight any issues. Information was gathered through existing data collection and consultation with various government entities (Planning Authority, 2002).

This topic paper highlighted several aspects such as (Planning Authority, 2002):

- Coastal management which fell under the responsibility of several entities and could lead to lack of cooperation;

- The importance of having a coastal strategy with a much clearer aim and that “it should be built upon the existing planning policy framework by introducing adequate policies” (Planning Authority, 2002, p. 110);
- Illegal development should be addressed through a more effective enforcement;
- A clear identification of the coastal boundary up to which management is to be applied is required;
- Enforcement is lacking due to lack of financial resources;
- Given the lack of a beach management system, especially when it comes to managing different coastal activities, the MTA was thinking of applying the BF criteria;
- The need to protect sandy beaches and low-lying coast from further development was deemed crucial;
- Development was mainly being located near the sea due to good accessibility;
- Often, there would be no information on who is the owner of an illegal development such as boathouses and this creates planning, management and enforcement problems.

All results obtained from the monitoring reports, the Coastal Strategy Topic Paper, and CAMP Malta were very similar. Also, most of the problems that were mentioned then are still an issue 18 years later (Section 3.3). As such a practical approach to address such issues should be undertaken immediately.

3.2.3. 2004 – 2013 (*post EU accession*)

In May 2004, Malta became one of the Member States of the EU and enhanced both its economy as well as its position in the Mediterranean (Tabone, 2014). Pressure on the coast continued, and the 2005 census showed that the population was moving

out of old villages and settling into newer ones which were mainly located near the coast. Indeed, it showed that in the coastal town of Marsascala there was a 96% increase in population followed by another coastal town, St. Paul's Bay, with 81% population growth. Furthermore, the increase in second homes more than tripled between 1995 and 2005, causing higher pressure and coastal urbanisation (MEPA, 2010).

3.2.3.1. EUROSION project (2004)

The aim of the EUROSION project, which was partially funded by DG Environment, was to provide the Commission with recommendations on coastal erosion management and policy. MEPA was responsible for the Maltese project and used two case studies: Għajn Tuffieħa (where both geological and geomorphological surveys were carried out in order to develop a MP) and Xemxija (only observations were made on this beach) (Borg, 2004). From this project it resulted that:

- Xemxija – substantial sand erosion took place over the years due to the surrounding area being heavily built up. This altered the shoreline considerably and so it was suggested to use the do-nothing policy.
- Għajn Tuffieħa – due to the MP that was established in 1997, this helped in slowing down coastal erosion. As such, it was suggested to use limited intervention.

The overall recommendations were to: (1) restore sediment balance, (2) allocate budget to coastal erosion and (3) to increase knowledge on coastal erosion and its management (Borg, 2004).

3.2.3.2. Coastal Area Management in Malta

One of the requirements of being a Member State, was for Malta to produce its own ICZM plan. As such, Malta, in collaboration with PAP/RAC in the CAMP Malta project, identified coastal issues. In this report, the management of the coastal area in Malta,

together with how the issues were being tackled after the CAMP Malta project, were addressed (PAP/RAC, 2005a).

Once again, the report highlighted the lack of an ICZM plan⁴ as well as a holistic approach toward coastal management due to various entities having different responsibilities (PAP/RAC, 2005a). In addition, it also mentioned the lack of reliable data and “analyses of relevant indicators [as such, there is] no regional benchmarking [to assess] the state and pressures of the marine and coastal environment” (PAP/RAC, 2005a, p. 58). Hence, it was suggested to create a standard database to share information and the use of sustainable indicators to compare results. The report also highlighted the importance of developing an MP both for the sandy and rocky beaches. In addition, the coastal zone should be defined through a legal notice, and the Coastal Resource Advisory Board (CRAB) should facilitate decision making. Furthermore, there should be an integrated approach whereby the physical, ecological, biological, anthropogenic, social, economic and other related coastal aspects should be taken into consideration and communication between different stakeholders should be enhanced (PAP/RAC, 2005a). Finally, it was suggested to “compile a Guide to Good Practices for ICAM in Malta, with particular reference to main impacting activities so as to integrate horizontal decision-making processes [as well as communicating the] benefits brought by ICAM implementation” (PAP/RAC, 2005a, p. 69). However, as discussed further in Chapter Six, almost none of the recommendations were adopted due to lack of finance and lack of cooperation between authorities.

3.2.3.3. DEDUCE project (2005 – 2007)

In 2005, Malta embarked on another project, DEDUCE, which was funded by Interreg IIIC under the European Regional Development Fund (ERDF) and was based on the EU ICZM Recommendation that was adopted by the European Council and Parliament in 2002 (Planning Authority, 2017). The aim of this project was to assess

⁴ In 2019, Malta ratified the ICZM Protocol in April and it came into force in May of the same year which committed itself into increasing cooperation in the Mediterranean region (Ministry for Foreign Affairs, 2019).

a set of 27 indicators that were proposed during the EU Working Group on Indicators and Data in 2003 (Marti et al., 2007). Only two of the beach indicators affected Malta, which were the:

- Coastal hard engineering structure – it has been estimated that between the year 1994 and 2004 the man-made coastline had increased by 1%, mostly due to build-up of roads, harbours and other infrastructures, bringing the artificial coast in Malta to a total of 20.94% (Marti et al., 2007; MEPA, 2010, 2015a). In 2012, the artificial coast slightly decreased to 20.78%, which means that it had remained stable since 2004. This slight decrease could be attributed to changes in the coastline profile (Environment and Resources Authority, 2018b).
- Coastal erosion – sometimes this indicator is not perceived as a threat but rather as a geomorphological process, hence, it is not given the importance it requires (MEPA, 2010). This can create problems both in the economic sector, such as the loss of a beach which in turn will affect the tourism industry, or else in the environment sector by losing important habitats. In 2008, it was estimated that around 43 km² (16% of the total) of the Maltese coastline was susceptible to erosion (MEPA, 2010). However, the new State of the Environment Report (2018) failed to highlight whether this number has changed (Environment and Resources Authority, 2018a).

3.2.3.4. Bathing water quality (2008)

In 1976 the EU launched the Bathing Water Directive (2006/7/EC) focusing on water quality criteria (Roca and Villares, 2008; European Commission, 2020a). This was later updated in 2006. Countries have to examine their bathing waters each year by taking water samples throughout the bathing season from mid-June to end of September and check for any bacteria which may be present, mainly the *Escherichia coli* and the intestinal enterococci. If these are present in the samples, it means that the area from where the sample originated is polluted (e.g. sewage outflow) and management measures such as closing the bathing area for swimming and putting up notice boards

have to be taken by the Member State (European Commission, 2020a). The public should be immediately informed of such results. Furthermore, before the start of each bathing season, the European Environment Agency (EEA) together with the EC produce a summary report on the bathing water quality based on the results obtained by the Member States (European Commission, 2020a).

In 2019, at least 22,295 bathing waters from different EU countries were assessed in order to compile the report. Results showed that 95% of these bathing waters were of good quality, meaning that they met the minimum standards of the EU's Bathing Water Directive. Only 1.3% had poor bathing water quality, while 87.4% were classified as excellent. The public can see this information both in real time and for past years on the Water Information System for Europe (WISE) website (European Environment Agency, 2020). Bathing water quality can be considered as an important component towards effective beach management, but this alone is not sufficient (Roca and Villares, 2008).

The Directive was transposed into Maltese Legislation by Legal Notice 125 of 2008 and amended by Legal Notice 237 of 2011. Every year, the Health Inspectorate Services monitor the water quality of bathing areas over a 23-week period and classify it accordingly as poor, sufficient, good or excellent (Government of Malta, 2020c). This tool is important for beach managers given that it is used to promote tourism for the clean and blue waters (MEPA, 2010). In fact, it is the only coastal and marine indicator being used in Malta that monitors the "quality of coastal waters, due to its link with health, coastal recreation and tourism" (MEPA, 2010, p. 31, 2012). However, the bathing water quality was criticised by various authors such as Nelson and Williams (1997) and Micallef (2002). This is because even though the water quality was classified as 'excellent', there were still reports that people fell ill after bathing. Hence, this questions the method being used to collect such data "since water quality at a particular point of a crowded bathing area is likely to change from one minute to another and cannot be taken as a representative of the point, let alone the bathing area as a whole" (Micallef, 2002, p. 127).

3.2.3.5. State of the Environment Report (2008)

This report was based on the results that emerged from the DEDUCE project and its aims were to identify and observe coastal pressures, their status, what was undertaken and any other issues. The report stated that there are two types of beach usage: permanent (which involves permanent activities such as boat houses and kiosks) or seasonal (such as recreation which mainly occurs in the summer period) (MEPA, 2010). Even though the various activities tend to occur together in such a restricted area, sometimes conflicts may arise between recreational and conservation aims and hence the need for a MP is high (MEPA, 2010).

From the results that were obtained by previous projects and reports (Sections 3.2.3.1 - 3.2.3.4), several initiatives started taking place in order to better manage the beach, such as (MEPA, 2010):

- The MTA was appointed as the responsible entity to manage Għadira Bay apart from St. Julian's and Bugibba Perched beach. Therefore, supervision, lifeguards and an emergency clinic started being provided under their supervision;
- Beach concessions were reviewed;
- The BF programme started operating in St. George's Bay (reclaimed beach) in 2008. However, it was suggested that this award be used also for natural sandy beaches;
- In total, six beaches were being managed by Non-Governmental Organisations (NGOs) together with the MTA, MEPA and the Ministry for Environment. The managed beaches were St. George's Bay, Bugibba, Għajn Tuffieħa, Golden Bay, Ramla l-Ħamra, and Għadira.

Nevertheless, once again the report highlighted the same problems as mentioned in other reports; that beach management becomes difficult when responsibility is divided among different ministries and authorities involved (MEPA, 2010).

Collaboration amongst different authorities was recommended to have effective beach management. In addition, more recent data are needed so as to study how climate change will affect the beach and also to help in decision making as well as producing MSP based on the various recommendations by different entities (MEPA, 2010). However, even though there were some efforts towards beach management, most of the problems that had been mentioned (Sections 3.2.1- 3.2.3) since the mid-1990s were still waiting to be tackled (MEPA, 2010).

3.2.3.6. Public Attitude Survey (PAS) (2008)

After the Environment Report of 2008, another PAS was carried out by MEPA as part of a public consultation to identify the public's perception on the environmental issues (such as beach cleaning and beach activities) found in the report. Unlike the PAS of 1999, this time, the survey was carried out face-to-face. A total of 1,042 people (as opposed to the 15,000 people in the 1999 survey) over 18 years of age "were randomly selected by MEPA from the electorate database [...] using aggregation by household, [to] ensure that only one person per household was chosen" (Ernst and Young, 2010, p. 4).

The questions regarding the beach (Ernst and Young, 2010) related to the:

- Quality of bathing water – only 39% of the people considered the quality of the bathing water to be good, whereas 15% of the respondents believed it was poor. Public perception contradicts the facts, since the Environment Report of 2008 stated that the "bathing waters were 99% compliant with EU bathing water standards in 2008" (MEPA, 2010, p. 2);
- Defined zones for control of activities at sea – slightly more than half (52%) of the respondents wanted to see an increase in these zones;
- Activities that damage the coast – this was an open-ended question. From the results, it was found that 34% of the respondents thought that liquid and solid wastes were damaging the coast, followed by beach-based recreation with 27% respondents.

The above results could not be compared with the previous survey since the methodology used was not the same and neither were the questions (Ernst and Young, 2010).

3.2.3.7. Strategic Plan for the Environment and Development (SPED) (2015)

In 2015, the Government together with MEPA issued the SPED document for consultation. This document was produced to “replace the [...] SP and regulate the sustainable use and management of land and sea resources in an integrated manner up to 2020” (Government of Malta, 2014, p. 1). The vision of the new SPED for the coastal zone and marine area is the following:

“[It] shall maximise the potential for sustainable socio-economic growth and renewable energy infrastructure, shall accommodate legitimate compatible uses, sustain the livelihood of the fishing community, remain rich in biodiversity and visually striking and become pollution-free and accessible for public enjoyment. It shall play a significant enabling role for the Maltese Islands to reduce their impact on climate change and strengthen their capacity to adapt to climate change” (MEPA, 2015b, p. 6).

Even though the SPED aimed to improve conservation, monitoring, and planning, it still met with criticism. The Opposition party did not entirely agree with the approval of the SPED as they argued that the document did not focus on the conservation of the environment nor on the feasibility of development. In addition, several NGOs such as Din l-Art Ħelwa and Friends of the Earth claimed that even though there were public consultations throughout the entire process, these were not taken into consideration in the final document (Times of Malta, 2015).

Three coastal objectives were identified within the SPED document, and possible solutions were suggested to meet these objectives (MEPA, 2015b):

- 1 The first objective gave importance to the prioritisation of the different coastal uses that need the coastal or marine area to develop, but without harming the environment. This could be achieved through the implementations of the MSFD and the Integrated Maritime Policy (IMP) and the relevant boundaries of coastal waters.
- 2 The second objective focused mainly on the fisheries and aquaculture sectors and how these can be developed in a sustainable way.
- 3 The last objective focused more on the protection of existing coastal resources and promoted facilities which do not hinder the public use of the coast. This could be achieved through the protection of beaches as well as the issuing of guidance especially when building new infrastructure such as yacht marinas or replenishments of the beaches (MEPA, 2015b). However, the long-term effects of the latter still need to be studied especially in relation to climate change (MEPA, 2010).

3.2.3.8. State of the Environment Report (2018)

The report covers the period from 2009 to 2015. The report only focused on the total floor area that was approved both for urban and rural coasts, as well as coastal projects such as refurbishments of breakwaters and terminals undertaken by Transport Malta (TM). The Report failed to mention the management that has already been undertaken such as BF beaches, the status of the coast and any other recommendations to safeguard the coast in the past ten years (Times of Malta, 2018).

3.3. Major issues being faced by Maltese beaches

“Malta’s coastal and marine environment is under considerable pressure from activities in sectors such as housing, tourism and recreation, shipping, fisheries and aquaculture, and waste, but is also threatened by climate change” (MEPA, 2010, p.

2). In Sections 3.3.1 to 3.3.7, the main issues identified from the literature that Maltese beaches are facing (not in order of importance) are discussed.

3.3.1. *Fragmented management approach*

In the Maltese Islands there is no one single authority that plans, manages and controls the entire coastal zone (Planning Authority, 2002; PAP/RAC, 2005). Instead, management is fragmented amongst various authorities with different sectoral interests, which can lead to problems of communication and data exchange between them (Micallef, 2002; Ariza, Sardá, et al., 2008; MEPA, 2010; Sardá et al., 2015). For instance, the coastal perimeter and foreshore is the responsibility of the Lands Authority (Government of Malta, 2017; J. Dalli, personal communication, August 28, 2019), but the management of certain beaches falls under the responsibility of the MTA.

Further to this, Local Councils (LC) have the responsibility to manage the beaches that fall under their jurisdiction and as such, they can also pass by-laws related to the cleaning of the beach, parking facilities, use of barbeques and other uses. However, sometimes, LCs are given more responsibility than they can cover with limited resources and finances and Micallef (2002) highlighted the importance of having an inter-ministerial body and close collaboration with all the concerned authorities in order to maximise beach management. Even though the Local Government Act designates the boundaries of each locality which includes the coastline perimeter (Government of Malta, 2020b), it does not specify anything related to beaches and their management. Additionally, during the semi-structured interviews undertaken with some of the mayors during the year 2018, they specified that they were not responsible for the management of beaches, but that the MTA was (refer to Section 6.2.2). Conversely, the MTA argued that their responsibility was between 10:00 am and 6 pm during summer, after which the responsibility falls to the LC and the police (P. Dingli, personal communication, June 20, 2016). This shows problems of communication and that responsibilities are not clear. Figure 3.2 shows the various entities that are involved in the management of coasts.

The Environment Report of 2008 highlights the importance of having clear aims and objectives and the same codes of practice between the different authorities. An instance when cooperation between the authorities succeeded is the beach management that has been taking place at St. George's Bay (MEPA, 2010). However, since there is no MP or coastal / beach management and there is lack of information and outdated data about the condition of the Maltese coast, these authorities tend to focus on their activity rather than seeing a holistic approach (Planning Authority, 2002; MEPA, 2010). A case in point is the building of seawalls along sandy beaches. In the long term, seawalls may create more harm than good as they change the shape of the coast, which in turn increases erosion that could be detrimental to the bathers (Planning Authority, 2002). For instance, the natural sand in Balluta Bay had disappeared from the beach due to the seawall and water polo pitch that were built along the coastline which altered the hydrodynamics of the beach (Pace, 2009) (Figure 3.3). More recently in 2018, the then Ministry for Tourism replenished Balluta Bay, even though experts had warned against this, only for the beach to disappear seven months afterwards (Camilleri, 2019).

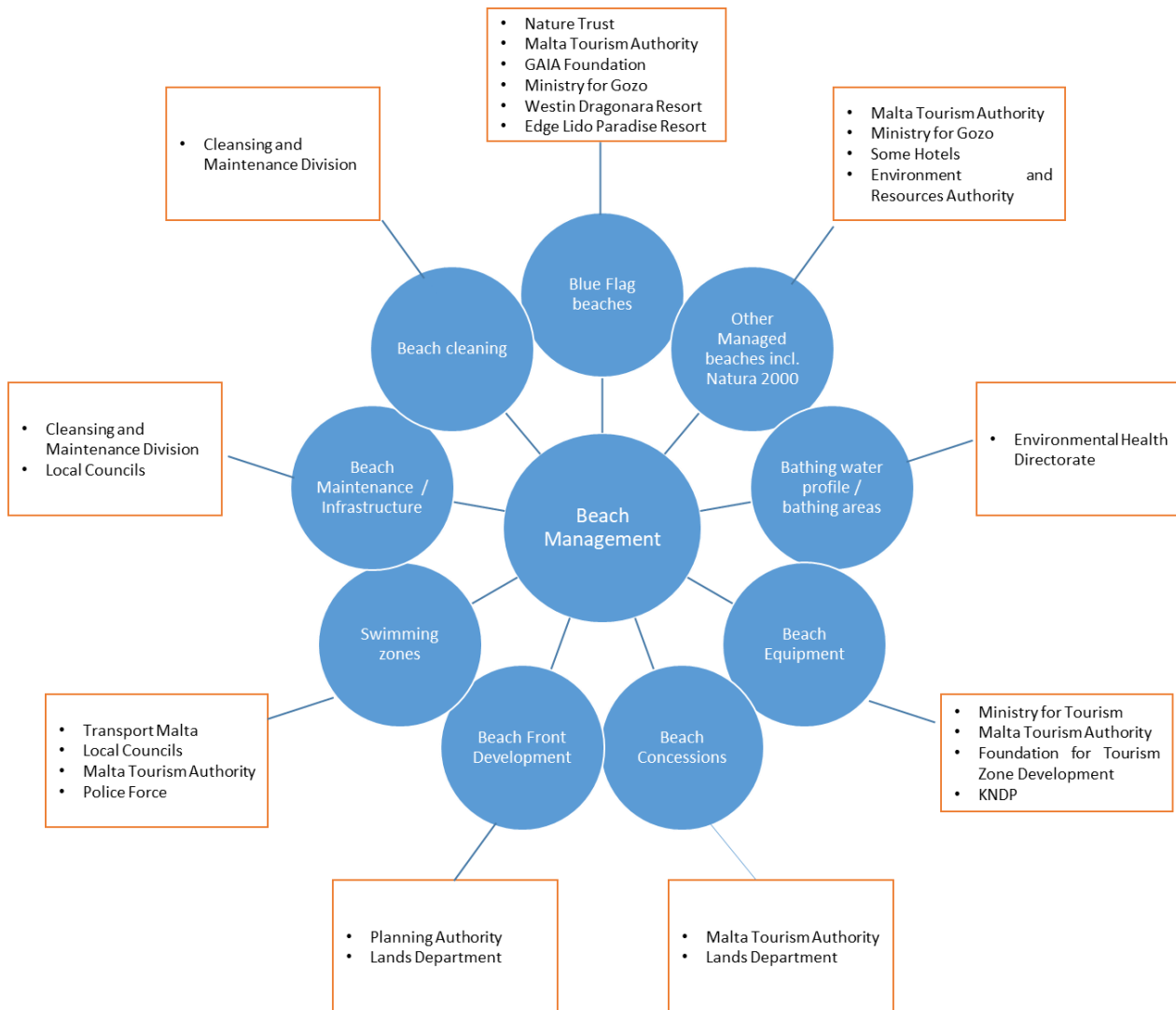


Figure 3.2: Organisational diagram with regard to beach management in the Maltese Islands.



Figure 3.3: Balluta beach surrounded by coastal development (Source: Author, 2020)

3.3.2. *No clear definition of coast/beach*

The coastal zone is defined as a spatial area that includes both the land and sea areas, whereby natural processes interact together (Planning Authority, 2002). It also includes anthropogenic activities that occur both on land and sea and which can affect the quality of the resource (Planning Authority, 2002). However, the term coastal zone in the Coastal Strategy Topic Paper (2002) is very broad and it is defined according to three different criteria: ecological, physical and administrative (Planning Authority, 2002; UNEP/MAP, 2003b). Subsequently, in the SPED and the State of the Environment Report of 2018, the definition differentiates between urban and rural coasts, since an urban coast would extend until the first road, whereas a rural coast extends further inland due to its ecological system. As for the seaward side, this extends up to 12 Nm (MEPA, 2015b; Environment and Resources Authority, 2018b).

With regard to beaches, this has been recently defined by the Government of Malta (2016, p. 923) as: “that part of the land contiguous to the shoreline, irrespective of how far inland it extends, which is of its nature or characteristics destined for public use in accordance with its nature and in accordance with any law from

time to time regulating development planning”. However, such a definition is very broad and the Civil Code was criticised for not being implemented immediately (Ganado, 2019).

3.3.3. *High competition amongst sectors*

Micallef and Williams (2003) and MEPA, (2010) argue the fact that competition amongst different sectors is remarkably high, especially between coastal conservation, recreation and the tourism industry. This problem is further exacerbated due to a lack of management system or plans and national policies with regard to the beach area of the Maltese Islands (Micallef, 2002; Ernst and Young, 2010). Also due to no single authority being responsible for beach management, it is much more difficult to resolve conflicts as they have to go through different sectors (Micallef, 2002).

According to the land cover survey of 2012, circa 80% of the land is being used for economic and residential purposes and is classified as artificial (30%), pastures and mosaics (51%) and arable land (0.6%) (European Environment Agency, 2017). Also, Micallef (2002) and UNEP/MAP (2003a) contend that the “coastline is subject to severe pressures of development [which is even] more intensified by the fact that 50% of the coast of mainland Malta [and 74% of Gozo] are classified as inaccessible due to a combination of physical features such as cliffs and coastal development” (Cassar, 2003, p. 73).

3.3.4. *Coastal development and beach erosion*

Beaches in Malta are very few (1.9% of the coastline) and these have been degraded drastically due to an increase in coastal development over the past decades. It is estimated that around 55% of the beaches have roads constructed directly behind them, whereas 25% of the beaches have roads built on them (Zammit Pace et al., 2019). Other development such as concrete sea walls, pontoons, and buildings in valleys reduce the amount of sediment deposited on the beach and also can alter its hydrodynamics (Planning Authority, 2002; Cassar, 2003; UNEP/MAP, 2003a).

In addition, without the proper scientific studies, coastal engineering, beach reclamation and artificialisation of the coast can lead to beach erosion (Planning Authority, 2002). The Monitoring Report that was undertaken between 1990 and 1997 found that a number of illegal boathouses and caravans, dumping of waste and other matters were very common around the Maltese Islands. According to the SP, these had to be removed so that the coastline could be accessible to the public free of charge. Unfortunately, the SP failed to determine the geographical extent up to which this is applicable. Therefore, enforcing it proved to be difficult given that the owners are not known, so one cannot liaise accordingly (Planning Authority, 2002).

3.3.5. *Increase in tourists*

As mentioned, in Section 3.2, the tourism industry increased dramatically after the 1970s and the coastline was being promoted for its sun, sand and sea. Development mainly focused on the coast and its surroundings (Planning Authority, 2002). In 2018, there were c. 2.5 million tourists and this number increases every year (NSO, 2019). Additionally, the Maltese population is circa half a million (NSO, 2019), so for a small island like Malta, the pressure becomes even higher creating competition amongst the sectors and the resources become scarce (UNEP/MAP, 2003a) mainly on the coast (Planning Authority, 1997, 1999). According to UNEP/MAP (2003a), if coastal development is not managed the original product that once attracted the tourists will be lost.

3.3.6. *Beach carrying capacity*

Beach carrying capacity has already been discussed in Section 2.5.5.3. Due to the different beach sizes, the Planning Authority suggested that a carrying capacity would be a good indicator to estimate how many people a beach would take. It was estimated that each bather would require at least 3 m² of beach space (Micallef, 2002). This would mean that for “a beach [with a] depth of 40 m and 560 m of sandy coastline” (Micallef, 2002, p. 438), the capacity would be 7, 500 persons. This clearly shows a discrepancy between the number of beaches there are and their demand,

and it highlights once again the importance of having guidelines or MPs so as to protect the beaches as much as possible (Micallef, 2002).

However, this indicator was turned down by the tourism industry, especially when in 1996 the Minister for Tourism announced that the government would limit the number of tourists arriving in Malta so as not to exceed the Islands' carrying capacity. This was never put into practice since it almost cost the minister's job after the idea was strongly opposed mainly by the tourism industry (Micallef, 2002). This is a typical case of politics in Malta – certain measures are not put in place even though they are needed since politicians are afraid of losing votes.

3.3.7. *Others*

As highlighted in Section 3.2.3.4, the only coastal and marine indicator being calculated by MEPA is bathing water quality (MEPA, 2012). Even though there has been some improvement regarding the management of beaches (i.e. the BF scheme), there are still other beaches which are not being managed. This could be due to financial constraints and due to the lack of MP. Additionally, other beaches are either not accessible by public transport or lack facilities, thus they do not meet the BF criteria (P. Dingli, personal communication, June 20, 2016).

Various studies as discussed in Section 3.2, such as Micallef, (2002); UNEP/MAP, (2003b) and MEPA, (2010) also identified other coast-related issues such as absence of current baseline data; lack of public awareness with regard to the regulations related to the environment; limited enforcement; no one single authority related to beach management; lack of national expertise as well as training opportunities; restricted funds and “lack of political will to enforce and implement policies and legislation” (Micallef, 2002, p. 441).

3.4. Current beach management practices

Section 3.3.1 discussed how beach management is fragmented, thus various authorities have different roles. The main management tool currently being used is

the BF scheme. Additionally, various beach management initiatives do not necessarily take place at the managed beaches or those beaches that have achieved the BF Award, which will be discussed in this section.

3.4.1. *Blue Flag Award and other managed beaches*

In 2019, 12 beaches were awarded the BF (Dingli, 2019) (Figure 3.4). There are other beaches (managed by the MTA, the Ministry for Gozo, and other hoteliers) which are also being managed but either cannot apply for the BF since they do not meet one or more of the criteria (such as located in a port) or because their managers do not want to implement this award. A case in point where beaches cannot obtain the BF but are still being managed by the MTA are Fajtata and Pretty Bay. The former has some illegal structures, whereas the latter is located in a port. Nevertheless, the MTA felt the need to provide a safe and healthy environment in the south of Malta (P. Dingli, personal communication, June 20, 2016). Since the MTA follows the BF criteria, it only manages those beaches that are easily accessible by public transport. This is because it wants to promote its use and it encourages all its employees to use public services. Those beaches which are not so easy to access, such as Delimara and Xrobb l-Għaġin beaches, even though very popular with both locals and tourists, are not managed (P. Dingli, personal communication, June 20, 2016).

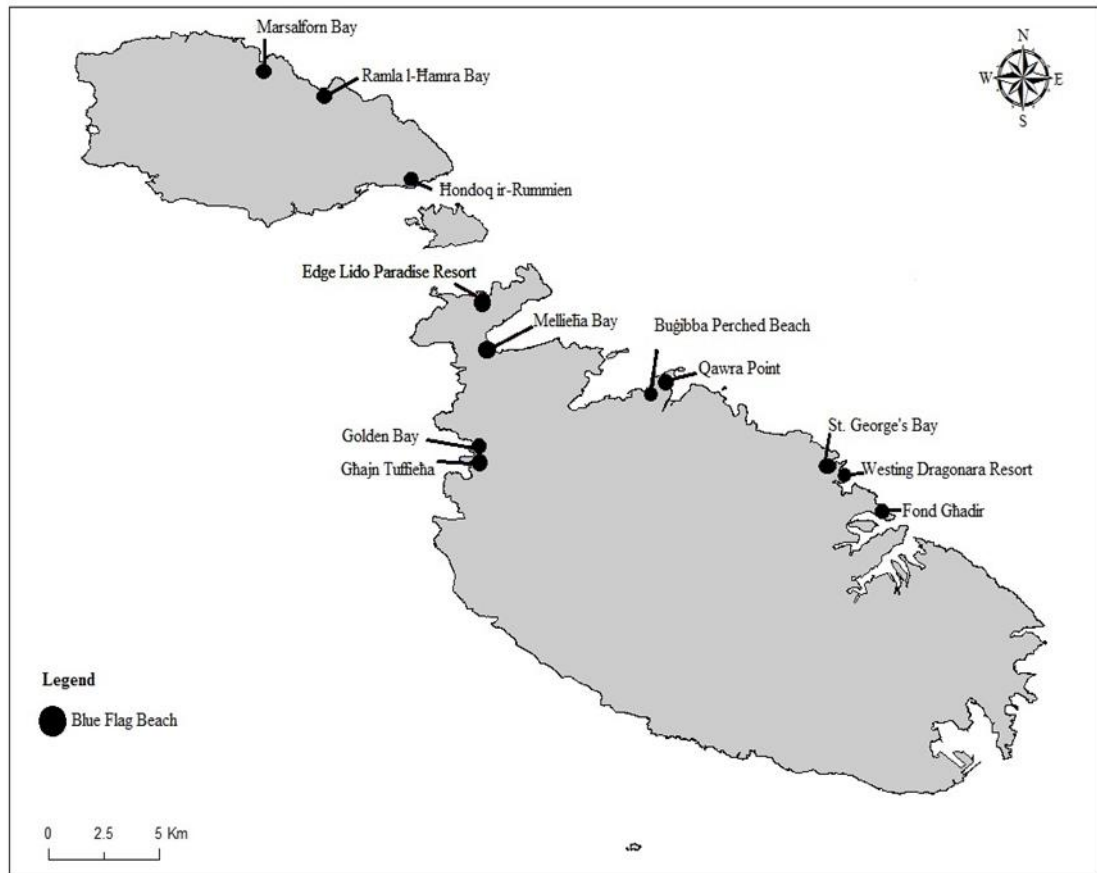


Figure 3.4: Blue Flag beaches in the Maltese Islands

BF beaches only operate between 15th June and 15th September from 10 am to 6 pm (Malta Tourism Authority, 2018). Outside these hours (between 6 pm and 10 am of the following day), the beaches fall under the responsibility of the LC and the police (P. Dingli, personal communication, June 20, 2016). However, little or no enforcement is undertaken between these hours. Some of the operations that are carried out include lifeguards, first aiders and beach supervisors. Sand shifting is carried out once or twice a week in the morning and beach maintenance takes place regularly. Furthermore, other things such as the flagpoles, showers, libraries, beach ashtrays (Butts off Sand campaign), waste separation campaign, clinic, accessibility on beaches (such as walkways, sand buggies and hoist chairs) are mostly available on these beaches. Daily beach reports are also compiled by supervisors to solve immediate issues. Additionally, every year, several educational activities for children are carried out with various experts on different beaches during the summer (Dingli, 2019).

3.4.2. *Bathing water quality*

In 2019, the Maltese Islands were one of four European countries with 95% of their bathing waters (87 bathing waters) classified as 'excellent' quality and all their bathing waters met the minimum criteria set in the Bathing Water Directive (European Environment Agency, 2020) (refer to Section 3.2.3.4).

3.4.3. *Zones reserved for swimmers*

The Ports and Yachting Directorate within TM are responsible for creating zones that are reserved for bathers. These zones are indicated by ropes and coloured marker buoys and no vessels can anchor or moor in these areas. In addition, no fishing activities can take place. These are placed every year from the date indicated for each beach until 30th September (Transport Malta, 2019). Those beaches that fall under the responsibility of an authority such as the MTA also manages the swimming zone. However, those beaches that are not being managed should be the responsibility of the LCs and/or the police.

3.4.4. *Other initiatives*

Apart from the management discussed in Section 3.4, other initiatives are taking place on different beaches (Table 3.3).

Table 3.3: Other Beach management initiatives

Initiative	Description	Responsible Body
Spot the Jellyfish	Involves the reporting of sightings of jellyfish	University of Malta – International Ocean Institute (IOI)
Safety swimmers pull rope	To aid bathers while at sea due to rip currents in Għajn Tuffieħa. (GAIA Foundation, 2012).	GAIA Foundation and the MTA

Dog-friendly beaches	There are a few coastal areas where dogs are allowed to swim under the Legal Notice 125 of 2008 - Management of Bathing Water Quality Regulations, 2008.	EHD
By-laws	Given the fact that beaches fall under the responsibility of the LCs, the latter can issue by-laws whereby they regulate some activities such as barbeques and camping on beaches (Government of Malta, 2020b).	LCs
Għajn Tuffieħa / Ramla l-Ħamra workplans	Every year, the GAIA Foundation has to prepare work plans and submit them to ERA. Upon approval by the ERA, the GAIA Foundation starts implementing tasks such as activities, cleaning up of beaches, and educational talks (G. Borg, personal communication, May 22, 2018).	GAIA Foundation in collaboration with the ERA and the MTA
Beach replenishments	Various beaches (Balluta Bay, St. Thomas Bay, St. George's Bay and Għar l-Aħmar beach) were replenished during the summer of 2019.	Ministry for Tourism
Operating procedures on beach cleaning	In 2017, ERA issued procedures on how managers should "keep beaches of high environmental importance clean while protecting coastal resources" (Environment and Resources Authority, 2017, p. 1).	The ERA
Code of conduct for Malta's beaches	Lists what is prohibited on a beach, and recommends other measures that should be adopted by the beach user (Malta Tourism Authority, 2020a).	The MTA, LCs

3.5. Summary

Chapter Three has assessed beach management in the Maltese Islands. First, an overview of how this developed since the Maltese Islands gained independence in 1964 was discussed. This was then followed by a discussion of the major issues the Maltese beaches are facing. These were: 1) a fragmented management approaches, 2) the lack of a clear definition of coast and beaches, 3) high competition amongst sectors, 4) coastal development and beach erosion, 5) increase in tourists and 6) beach carrying capacity.

Finally, the last part of this Chapter (Section 3.4) described current beach management that is taking place. The main management tool that is currently being used is the BF Award. However, there are other initiatives such as the bathing water quality, zones reserved for swimmers and other initiatives that are also being used. Nevertheless, these are not being used in an integrated approach.

This chapter helped in understanding how beach management is being applied in the Maltese Islands. The knowledge gained through this literature will be useful to critically assess the processes and approaches towards beach management and identify similar issues in other countries. These results would then contribute to the development of the beach management model in Chapter Seven. The next Chapter (Chapter Four) outlines the methodology used for achieving this research.

Part Two: Data Collection, analysis and interpretation

Chapter Four: Methodology

4.1. Introduction

Chapter Four outlines the research process that was employed, the qualitative and quantitative methods to undertake this research and the data collected in order to achieve the aims and objectives set out in Chapter One. This chapter is divided into six main sections. It begins with the rationale for the research, followed by the methodology used together with the justification for using a mixed-method approach. This is followed by a description of the case studies chosen for this research. The third section describes how the data were collected, followed by Section Four which discusses how the data were analysed. It also describes how the data findings will be disseminated. Finally, Sections Five and Six describe the ethical considerations and end with some reflections on the research process.

4.2. Research methodology

Sections 4.2.1 to 4.2.3 describe the underlying reason why this research was undertaken, the rationale for the methodology used as well as justifying why a mixed method approach was used.

4.2.1. *The rationale for this research*

This Ph.D. research mainly developed from the researchers' love for beaches. The researcher grew up and still lives on this small island where beaches are only a couple of minutes away from home which awakened her interest in the subject. This love was one of the main reasons why geography was chosen as a main subject for her undergraduate degree. This also inspired her undergraduate dissertation, which was on beach processes affecting two Maltese beaches: Ġħajn Tuffieħa and Balluta Bay. Through this research and further reading it was learned that beaches should be considered as a valuable resource, given that they only amount to circa 1.9% of the Maltese coastline (Zammit Pace et al., 2019). Additionally, beaches are susceptible to erosion and heavy development, particularly related to their promotion for tourism (Zammit Pace et al., 2019).

As part of her current role she have sought opportunities to look into policy related to environmental management, particularly that of the Maltese coastline, to try and understand more about beaches and how these are being managed. However, research on the subject is limited and/or outdated. The most relevant published research on beaches and their management on the Maltese Islands was undertaken at the turn of the millennium, including Micallef (2002); Micallef and Williams, (2002); Micallef (2003a); Micallef and Williams (2004) and Williams and Micallef (2009), whereby they developed the BARE and the BAMM (as explained in Sections 2.5.5.4 and 2.5.5.5) (Williams and Micallef, 2009). Other research which focused on coastal erosion was undertaken by Farrugia (2008, 2017) which focused on public perceptions on coastal erosion and Micallef, Micallef, and Galdies (2017), where they assessed the coastal erosion of the Maltese Islands using the Coastal Hazard Wheel tool.

The two literature reviews in this research highlight that only a few beaches are being managed and that the main management tool being used is the BF Award. Additionally, no authority is specifically managing all the beaches, but this is fragmented amongst different sectors, with the MTA being the main authority who is managing most of the beaches that gained the BF Award. Hence, this has instigated her interest in researching more about the development of beach management on Malta and to know what the current issues are (as discussed in Section 3.3), laying the groundwork for my research.

4.2.2. *The research processes*

In all research studies an appropriate research design is required before any type of data collection and/or analysis can begin. This type of structure ensures that any collected data are sufficient and suitable to provide the correct evidence and answer the aims and objectives of the study explicitly (de Vaus, 2001). This section describes the methods used to achieve the objectives of this study.

As specified in Chapter One, the study aimed to assess the processes and approaches to beach management and to develop a framework. First, a desktop study was

undertaken to identify the best methods and tools being used to manage beaches. As a result, it was found that the most effective approach to collecting and analysing data was to use mixed methods, including both qualitative and quantitative data (as further discussed in Section 4.2.3). Data collected included: secondary data, field observations at four different sites, beach users' questionnaires, and semi-structured interviews with stakeholders. Additionally, desktop studies were also used to discover the history and evolution of the concept of beach management in the Maltese Islands. Major issues that Maltese beaches are facing, as well as current practices that are being adopted by the authorities to manage them were identified.

Furthermore, during the desktop studies, it was also established that the most suitable approach to take was to use case studies from Malta (as further discussed in Section 4.3). This was due to the fact that case studies "generate an in-depth, multi-faceted understanding of a complex issue in its real-life context" (Crowe et al., 2011, p. 1). Initially, five beaches, Għadira Bay, Għajn Tuffieħa Bay, Pretty Bay, Ġnejna Bay and St. George's Bay were chosen but the latter one was dropped after the pilot study as a result of the lack of cooperation from the beach users. Given that the EU directives such as the MSFD and the ICZM and various researchers (Ariza, Sardá, et al., 2008; Roca, Riera, Villares, Fragell, and Junyent, 2008; Ariza et al., 2014; Lozoya et al., 2014; Lucrezi et al., 2015; Marzetti et al., 2016) agree that public participation is important to improve coastal management, face-to-face and online questionnaires were also carried out in all case studies to analyse how public participation can affect management. In addition, semi-structured interviews with relevant stakeholders were also undertaken. All these were carried out during a two-and-a-half-year period and the approach (Table 4.1), as discussed above, can be summarised in the modified diagram as presented by Noor, (2008) (Figure 4.1), where desktop studies helped in formulating the theory about the Maltese beaches. Based on the latter, the research was designed and selected four case studies where the necessary data could be collected. All the data collected were then analysed through Excel (beach users' questionnaires) and NVIVO (semi-structured interviews) (Section 4.5). From the results obtained in the four case studies, conclusions were drawn and a sustainable beach management framework was developed, as further explained in Chapter 7.

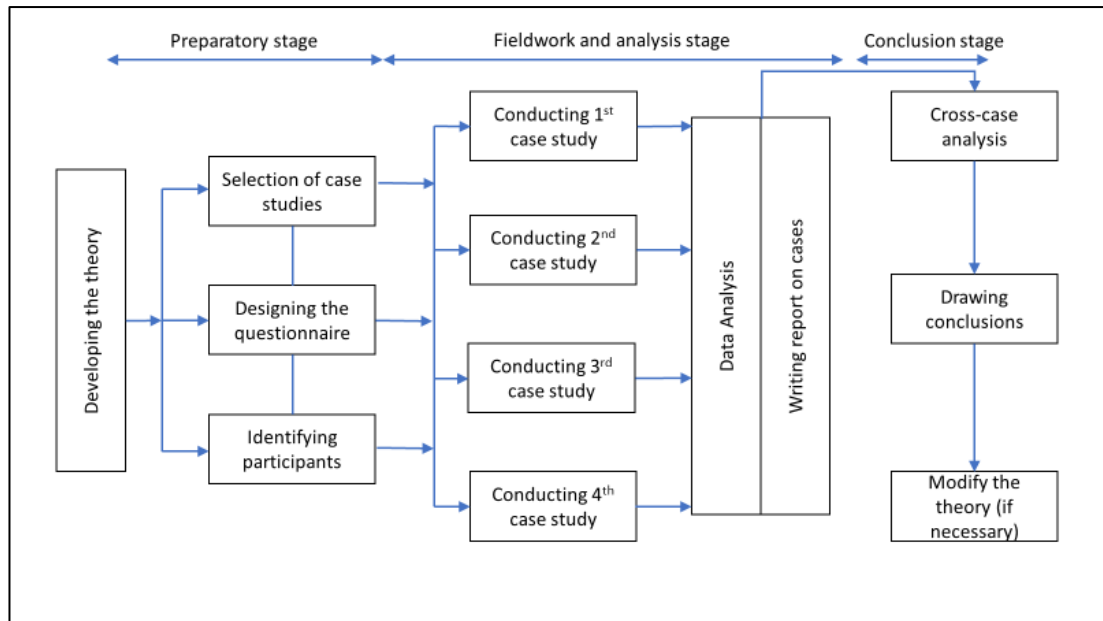


Figure 4.1: Stages to be undertaken during a case study approach (Source: Modified from Noor, 2008)

Table 4.1: Timeline of fieldwork

September – October 2016	Pilot study	<ul style="list-style-type: none"> - Collected questionnaires from beach users - Took notes when users where not sure of the question - Conducted field observations
November 2016 – June 2017	Processing period	<ul style="list-style-type: none"> - Input data on Excel - Analysed initial data - Based on the results, took the decision to drop St. George's Bay - Removed/modified some of the questions to make the questions easier for the users - Identified potential stakeholders for each cases study - Identified questions to ask the stakeholders
January 2017 – May 2018	Online questionnaires	<ul style="list-style-type: none"> - During the processing period it was decided to put the questionnaire online as well, to reach more people. - Questions were the same as the ones conducted on site
July – September 2017	Main questionnaires	<ul style="list-style-type: none"> - Collected questionnaires from beach users
March 2018 – May 2019	Semi-structured interviews	<ul style="list-style-type: none"> - Invited all the stakeholders for the interview - Undertook the interviews between April 2018 and November 2018 - Transcribed the interviews and sent them to the stakeholders for confirmation

4.2.3. *The justification for the mixed methods approach*

The term 'mixed methods' is used when both qualitative and quantitative research is integrated into a single project (Bryman, 2012). The quantitative research method is based on numeric/statistics data such as questionnaires, and the larger the data set, the better (Ernst, 2002). Conversely, qualitative research methods refer to descriptive/narrative information such as interviews. The latter provides a one-to-one communication which, apart from understanding peoples' experiences and perceptions, also provided me with the opportunity to ask for further information or clarifications. This kind of approach is not possible through a purely quantitative approach (Teddlie and Tashakkori, 2008). In various cases, both qualitative and quantitative methods are used to study one issue at the same time and this is referred to as data triangulation. Triangulation is important, as the results obtained from one research method can be cross-checked with the results obtained from another method (Bryman, 2012). Several authors (Bamberger, 2000; Teddlie and Tashakkori, 2008; Hussein, 2009; Crowe et al., 2011; Bryman, 2012) agree that using multiple sources of data increases the chances of that particular study being effective and more credible.

Reflecting on these approaches, the data gathered for this study was a mixture of both quantitative and qualitative data collection. Based on the six different strategies of data collection proposed by Johnson and Turner, (2003); Teddlie and Tashakkori, (2008); and Bryman, (2012), the following approaches were used:

1. Questionnaires to collect the users' perceptions of beach management at four different case studies. These were done both face-to-face (n = 225) (to interact with both the locals and tourists) and online (n = 223) (to increase the rate of response). Even though questionnaires were mainly used for the quantitative data collection, some of the questions were also considered as qualitative since the questionnaires included open-ended questions for beach users to express their opinion.

2. Semi-structured interviews (n = 19) with different stakeholders including government entities, NGOs, experts and kiosk owners. With such data, opinions at different levels of expertise could be collected.
3. Field observations (such as beach accessibility, beach occupancy, safety parameters and facilities) were undertaken for each case study in order to familiarise herself with the area. Additionally, these were conducted to help beach managers improve the area by identifying certain patterns such as rip currents (Williams and Micallef, 2009).
4. Secondary data such as archived information and official documents to evaluate historical development of beach management in the Maltese Islands as well as identifying effective methods and tools.

Further details on the four mentioned strategies will be discussed in Sections 4.4 and 4.5.

4.3. Selection of case studies

According to Yin, (1994, p. 1), case studies are “the preferred strategy when how or why questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context”. In addition, Rowley (2000) discusses how case studies can: (1) be a mix of qualitative and quantitative data (triangulation data), (2) use multiple sources of data such as questionnaires, interviews and observations, and (3) can contain one or multiple case studies. The latter is favoured due to the fact that the more cases are gathered to test a theory, the stronger the results (Rowley, 2000). Case study research can either be exploratory (formulating the hypotheses), descriptive (depiction of a process), or explanatory (analysing the processes) (Yin, 1994; Rowley, 2000; Noor, 2008; Crowe et al., 2011). This research took a descriptive, multiple-case approach so as to allow replication of the method, increasing confidence in the overall results. Case studies tend to focus on a particular issue within a real-life context (Yin, 1994; Noor, 2008). Given that the aim of this research was to assess

past and present processes and approaches towards beach management, choosing suitable case studies was key to understanding any problems at greater depth (Noor, 2008) and to formulating recommendations for future preservation and management.

As mentioned in Chapter 3, beaches only make up circa 1.9% of the total coastline of the Maltese Islands, making them a valuable but also limited resource (Zammit Pace et al., 2019). Zammit Pace et al. (2019), identified a total of 58 beaches⁵ around the Maltese Islands in 2013 by using Google Earth images to measure their dimensions, alongside a combination of field observations and literature review to determine their anthropogenic features and other characteristics. From these 58 beaches, this research focused on only four of them⁶, based on specific criteria. This included a mixture of beaches with different settings and types of management such as their location (urban and rural areas), managed versus non-managed beaches, and beaches which gained the BF Award and others which did not (Table 4.2). Only the island of Malta was taken into consideration, as it is the largest island of the archipelago, and the practicalities associated with accessing the beaches, including location, the time required to reach them and accessibility. Nevertheless, Malta's beaches can serve as an example to other small island states by applying lessons learned in other studies (Chapter Seven). The case studies were the beaches of St. George's Bay (St. Julian's), (this was dropped as explained in Section 4.2.2), Pretty Bay (Birżebbuġa), Għajn Tuffieħa (Mġarr), Għadira (Mellieħa), and Ġnejna (Mġarr) (Figure 4.2 and Table 2.3). Descriptions of each case study are provided in Section 4.3⁷.

⁵ "Beaches are defined as significant accumulations of littoral sediment which can include sand, gravel, and cobbles deposited and/or reworked by waves" (Zammit Pace et al., 2019).

⁶ After a fifth potential case study (St. George's Bay) had to be omitted due to low response rate as mentioned in Section 4.2.2.

⁷ The baseline maps source used for Figures 4.2 – 4.7 was Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IN and the GIS User Community

Table 4.2: The different typology on which each case study was chosen.

Case Studies	Urban/rural	Artificial/Natural	Managed?	Blue Flag Award?
St. George's Bay	Urban	Artificial	Yes	Yes
Pretty Bay	Urban	Artificial	Yes	No
Għajn Tuffieħa	Rural	Natural	Yes	Yes
Għadira	Rural	Natural	Yes	Yes
Ġnejna	Rural	Natural	No	No



Figure 4.2: Beaches around the island of Malta

Table 4.3 Showing the names of all the 58 beaches around the Maltese Islands

ID	Beach name	ID	Beach name
1	Unnamed Bay 1	30	White Tower Bay 2
2	Ix-Xatt l-Aħmar 1	31	Mellieħa Bay Hotel beach
3	Ix-Xatt l-Aħmar 2	32	Għadira Bay
4	Mgarr ix-Xini	33	Unnamed Bay 3
5	Xlendi	34	Imġiebaħ Bay
6	Dwejra Inland Sea	35	Għajn Ħadied
7	Wied il-Għasri	36	Mistra Bay
8	Xwejni Bay	37	Xemxija Bay
9	Qbajjar	38	Saint Paul's Bay
10	Marsalforn 1	39	Buġibba Perched Beach
11	Marsalforn 2	40	Unnamed Bay 4
12	Ramla Bay	41	St. George's Bay (St. Julian's)
13	San Blas	42	Balluta Bay
14	Daħlet Qorroq	43	Rinella Bay
15	Unnamed Bay 2	44	St. Thomas Bay 1
16	Ħondoq ir-Rummien	45	St. Thomas Bay 2
17	Santa Marija 1	46	Il-Ħofra ż-żgħira
18	Santa Marija 2	47	Marsaxlokk Bay
19	San Niklaw 1	48	Għar l-Aħmar
20	San Niklaw 2	49	IL-Qajjenza
21	Blue Lagoon	50	St. George's Bay (Birżebbuġa)
22	Cominotto beach	51	Pretty Bay
23	Paradise Bay	52	Fomm ir-Riħ
24	Ċirkewwa Bay	53	Ġnejna Bay
25	Ramla tal-Bir	54	Qarraba Bay
26	Ramla tal-Qortin	55	Unnamed Bay 5
27	Armier Bay	56	Għajn Tuffieħa Bay
28	Little Armier Bay	57	Golden Bay
29	White Tower Bay 1	58	Anchor Bay

4.3.1. St. George's Bay – St. Julian's

St. George's Bay is located on the north-eastern coast of Malta at the head of Ħarq Ħamiem Valley and between two heavily urbanised headlands (Figure 4.3). A road lies right on top and at the back of the beach which divides the beach from the valley and its tributaries. In addition, the beach is located in a Natura 2000 – Special Area of Conservation – Żona fil-Baħar fil-Grigal ta' Malta (SAC) as per the Habitats Directive (92/43/EEC). However, no conservation measures are yet in place. According to the

beach classification as described in Williams and Micallef (2009) and slightly modified by Zammit Pace et al. (2019), this beach can be classified as urban given that it is located within an urban area, has multiple facilities and is frequented by a large population including number of tourists.



Figure 4.3: Map showing the location of St. George's Bay surrounded by development.

Before the replenishment, the beach was heavily eroded due to coastal urbanisation, leaving only a small amount of sand in one location of the bay (Ebejer, 2004; Farrugia, 2017). The bay was replenished in 2008 with circa 7, 000 m³ of coarse sand from the Jordan desert, creating an artificial beach of circa 4, 000 m² (Borg, Gauci, Magro, and Micallef, 2006). Given the enlargement of the bay, and that there was no prior administration, the management of the beach itself was entrusted to the MTA (Ebejer, 2004). With continuous management and monitoring by the MTA, St. George's Bay was awarded the status of a BF beach for the first time in 2009 and has been winning it ever since (MTA, 2010; Farrugia, 2017; Dingli, 2019).

4.3.2. *Pretty Bay – Birżebbuġa*

Pretty Bay is situated on the south-eastern part of Malta and can be classified as an urban beach (Zammit Pace et al., 2019) (Figure 4.4). Pretty Bay is located in a port and the adjacent areas are full of human activities; for instance, there is the water polo pitch on the west of the bay, a breakwater and a small fleet to its east, and the Freeport to its north. In addition, the beach itself has been highly modified with a football pitch, basketball pitch and even a skate park.

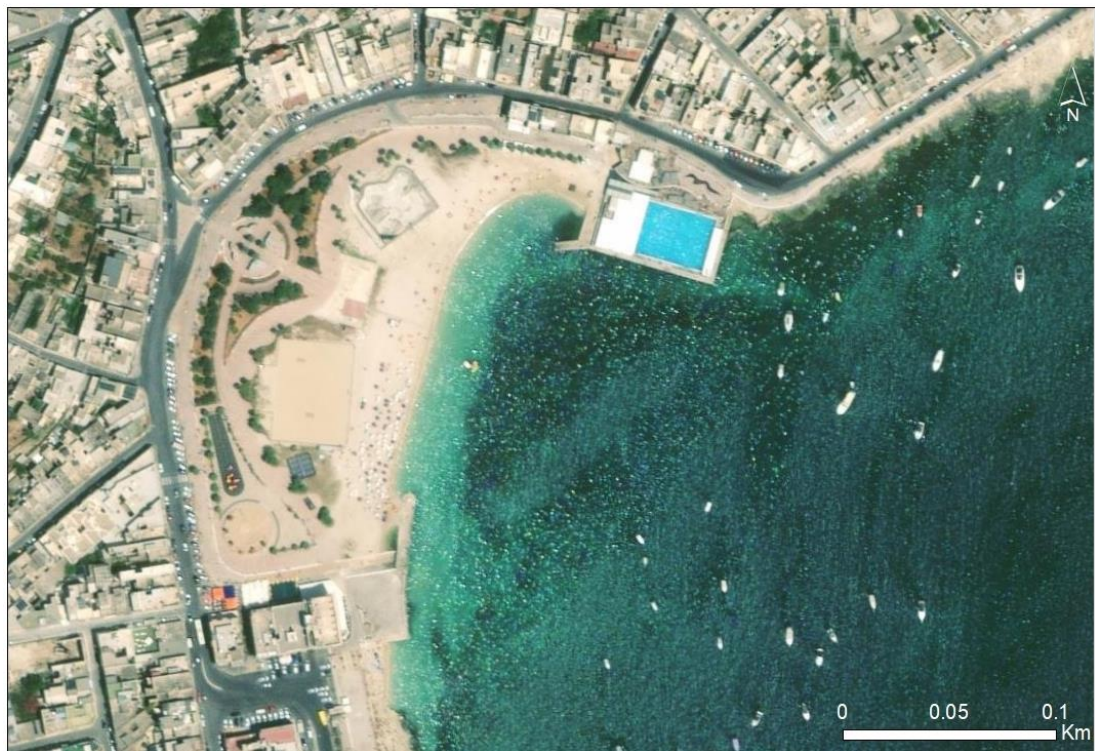


Figure 4.4: Map showing the location and beach of Pretty Bay.

Pretty Bay was not always a sandy beach, in fact, like St. George's Bay, it is also artificial. The beach underwent various changes over time. In the 1950s and 60s, the beach suffered from erosion, most probably due to lack of sediment transport and deposition as well as modifications to the beach. A jetty which was built on the right-hand corner of the beach proved to be beneficial as most of the sand was protected from the inshore circular current (Spiteri, 1990; Farrugia, 2017). The first attempt at beach replenishment took place in the 1970s following a decision by the Tourism Board together with the then Ministry of Public Building and Works (Farrugia, 2017). In addition, in the late 1980s, dredged material from the nearby construction of the

Freeport was deposited on Pretty Bay (Borg et al., 2006; Farrugia, 2017). The bay was further replenished with dredged material during the mid-1990s when the second terminal of the Freeport was being constructed. It is estimated that c. 20, 000 m³ of sand was pumped onto the beach, creating a deeper bay and allowing further improvements along the shore such as the widening of the coastal road (World Bank, 2003).

As of 2014, Pretty Bay became managed by the MTA in collaboration with the Foundation for Tourism Zone Development (FTZD). Nevertheless, this beach cannot be awarded the BF Award, as the latter does not accept the fact that it is located in a port (V. Attard, personal interview, April 25, 2018).

4.3.3. *Għajn Tuffieħa – Mġarr*

The natural pocket beach of Għajn Tuffieħa is located on the north-western coast of Malta between il-Qarraba headland to the left side of the beach and Golden Bay headland to the right. It is located in a rural environment circa 2 km from Mġarr and Manikata villages and thus it is classified as a rural beach (Zammit Pace et al., 2019). The beach is backed up by a 75 m high slope which is formed mainly of Blue Clay (Zammit Pace et al., 2019) (Figure 4.5). It is accessible either through the pathways on the slope or else down a long flight of steps.

During the early 1990s part of the slope was disrupted to make way for a road to provide access to a development on the beach. This disruption created dislodged materials which resulted in the formation of wide channels that are still present today (Debono, 2009). These channels are becoming wider and deeper every time there is a storm. Given that the soil is clayey, water does not percolate and ends up as runoff, transporting soil to the beach (Zammit Pace et al., 2019). Most of the beach has been left undeveloped, not only due to its protection but also due to the presence of faults and joints that do not allow any development. One case in point is the old Hotel Riviera Martinique, which was built in the 1970s but due to its location on clay slopes it starting to collapse, becoming a dangerous structure, and therefore was forced to close in the 1980s.



Figure 4.5: Shows the location and beach of Ghajn Tuffieħa.

In 1995, the sand dunes on the beach were scheduled as an Area of Ecological Importance (AEI) (G.N. 117 of 1995) by the then MEPA. In addition, in 1996, the area was also scheduled as an Area of High Landscape Value (AHLV) for its coast and cliffs (G.N. 400 of 1996). As such, the then EPD⁸ entrusted the GAIA Foundation⁹ to manage the area of Ghajn Tuffieħa including all government land between Ġnejna Beach and Golden Bay, covering a total area of 0.8 km² (The GAIA Foundation, 1997, 2005). One of the main obligations is for the Foundation to prepare yearly management work plans and also manage and monitor the area of the beach and its surroundings. In addition, the beach is located in a Natura 2000 – Special Area of Conservation (SAC) – Żona fil-Baħar bejn Rdum Majjiesa u Ras ir-Raħeb as per the Habitats Directive (92/43/EEC). However, no conservation measures are yet in place.

The beach of Ghajn Tuffieħa has been awarded the BF since 2012. Until 2017 the management of the BF was under the GAIA Foundation in collaboration with the

⁸ Today it is known as the Environment and Resources Authority (ERA).

⁹ The Gaia Foundation is a Non-Governmental Organisation founded in 1994 and whose aim is to manage protected sites and promote a holistic lifestyle. GAIA4 is responsible for the management of Ghajn Tuffieħa, Golden Bay and Ramla l-Ħamra.

MTA. As of 2018, the MTA took full responsibility for the Għajn Tuffieħa bay operations during the summer (Malta Tourism Authority, 2018).

4.3.4. *Għadira Bay – Mellieħa*

The bay of Għadira is located on the north-eastern rural coast of Malta and can be classified as a rural beach (Zammit Pace et al., 2019). The beach is located between two headlands and is considered the largest beach on Malta (Debono, 2009) (Figure 4.6). In addition, the beach is located in a Natura 2000 – SAC – Żona fil-Baħar fil-Grigal ta' Malta as per the Habitats Directive (92/43/EEC). However, no conservation measures such as regulations of certain activities are yet in place.

As mentioned in Section 3.2.1, due to sand erosion from various beaches, during the 1980s and 1990s sand was taken from Għadira Bay and placed on other beaches (Planning Authority, 2002). Like St. George's Bay, this beach also has a road at its back which hinders the sediment from moving inwards and it is believed to be "in the process of erosion" (Spiteri, 1990, p. 50). There have been various proposals to remove the road and either relocate it further inwards (Debono, 2009) or elevate it (EMDP, 2018) in order to encourage inland sand migration. Nevertheless, it is still unclear whether relocation or elevation of such a road will actually be beneficial and initial studies are suggesting the contrary (Debono, 2009, 2018). Hence, further studies are recommended prior to implementing the development. In addition, during the summer of 2017 the government announced plans to extend the Għadira Bay by some 40 m, but this has not yet happened and studies to assess the feasibility are still underway (Debono, 2018). Part of Chapter Five will discuss the stakeholders' perception of this project. With regard to management, this beach has been taken care of by the MTA in collaboration with the FTZD since 2009. In 2010, it got its first BF Award and it has been winning this award ever since.



Figure 4.6: Showing the location and beach of Għadira.

4.3.5. *Ġnejna Bay – Mġarr*

The bay of Ġnejna is located on the north-western rural coast of Malta to the south of Għajn Tuffieħa Bay and is also situated between two headlands (Figure 4.7). This beach can also be classified as rural (Zammit Pace et al., 2019) given that the nearest village is that of Mġarr, which is c. 2 km away. It does, however, have some facilities such as kiosks and lavatories. This natural beach is also a Natura 2000 site – SAC – Żona fil-Baħar bejn Rdum Majjiesa u Ras ir-Raħeb as per the Habitats Directive (92/43/EEC). However, no conservation measures are yet in place. It is “fed by two valleys bypassing a knoll to reach the beach [and], even though one is a road, the steep gradient enables the sediment that accumulates from the sides of the valleys to reach the beach and replenish it” (Spiteri, 1990, p. 58). Hence, the beach seems to be in balance (Spiteri, 1990).



Figure 4.7: Shows the location and the beach of Ġnejna.

Even though this beach is not a BF and is not being managed by the MTA, the latter still installed accessibility facilities such as walkways and provided sand wheelchairs or ramps. Nevertheless, management is lacking and if it were not for the two kiosks and the water sports shop that help in cleaning the beach and reporting any issues, the bay would be of inferior quality to other beaches. Even though the jurisdiction of this beach falls under the Mġarr LC, both people and other stakeholders argue that the beach is left almost abandoned (refer to Sections 5.3.5 and 6.2.2).

4.4. Data collected

This section describes the various methods that were used to collect the data, from desktop studies to questionnaires, field observations and semi-structured interviews.

4.4.1. *Desktop studies*

A desktop study was carried out during the early stages of this research before a more detailed investigation of the field was carried out. This provided an initial understanding of the:

- past and current beach management around the Maltese Islands,
- case studies outlining location, history and the type of management in place (if any),
- effectiveness in management by including beach users' perception as well as stakeholders' awareness in beach management, and
- responsible bodies and/or authorities that were to be interviewed in the research.

Secondary data such as scientific reports, local reports, articles, regulations, MPs, historical photos and other related sources were scrutinised and stored on the Mendeley Desktop, which was used both as a PDF organiser and as a reference manager. The desktop study served as a pillar to the following sections.

4.4.2. *Field observations*

As mentioned in Section 4.3, case studies are important to identify issues within a real-life situation (Yin, 1994; Noor, 2008). It is also imperative to know information about a particular beach so that management is efficient. Thus, Micallef and Williams (2004, 2009) developed a beach register which could be useful to beach managers. The register includes various parameters such as accessibility, beach facilities, shore type, designated sensitive area and water quality.

For each case study, a slightly modified and simplified version of the beach registration as proposed by Micallef and Williams (2004, 2009) was used (Appendix II). The beach register was filled in during the first visit to each case study, thus in the

summer of 2016. Each observation took around 15 minutes to complete and data were recorded on the beach register (Appendix II). Some of the information (such as length and width of the beach and sensitive designated areas) were filled in during the case study literature review. Given that the beach users' questionnaires were undertaken during summer, the beaches were not visited during the rest of the year. However, a recommendation would be that beach registration should be undertaken during the rest of the year to identify spatio-temporal changes.

4.4.3. *Questionnaires*

According to several authors (Marin et al., 2009; Koutrakis et al., 2010; Duvat, 2012; Lucrezi et al., 2016) public participation in terms of attitude (the way they feel) towards and perception (their understanding) of beaches is considered essential in beach management. Hence, face-to-face structured questionnaires were used to collect such data. This method was preferred because the researcher was present while the beach users were filling in the questionnaire, which according to DeFranzo (2014) ensures: (1) reduced false information, (2) answers are more focused and distractions are minimised, (3) the interviewer has more control over the situation and (4) behaviours and reactions can be captured.

Conversely, however, the use of computers and the internet for capturing questionnaires and data is becoming more frequently used, therefore it was felt important to use this medium to reach a larger audience and cover all bases. This also reflected the realisation when conducting the questionnaires that during summer many people were reluctant to fill them in due to the heat and the fact that they were relaxing and said they did not have time. The online questionnaire therefore gave an opportunity for beach users to fill it in at their own pace and comfort (Kralj, Zaletel, Lavtar, and Zupanic, 2016).

4.4.3.1. Designing the questionnaire

The questionnaire was designed to address Objective Three of this research, to identify beach users' perceptions and demands. As mentioned in Chapters Two and

Three, public participation was important from the early stages of the decision-making process. Such participation could only be achieved through the understanding of public feeling and familiarity with the subject and place (Koutrakis et al., 2010). Therefore, the intention of the questionnaire was to collect information on the following matters:

- Beach users' preference for choosing a particular beach;
- Activities carried out at and on the beach;
- Familiarity with the BF Award;
- Awareness of beach management;
- Beach users' opinions on the issues being faced by Maltese beaches; and
- Whether as beach users they would be willing to participate or be kept informed on beach management-related issues.

The questionnaire included a combination of closed and open-ended questions. With regard to the closed questions, these were in the format of a tick box, mainly due to the fact that the questionnaire had to take place on the beach under the scorching sun while the participants would be relaxing. Thus, the least possible time to collect the necessary data had to be used so as to minimise the 'no' replies. In addition, closed questions provided the participants with a defined answer, thus making questions easier and less time-consuming (FAO, 1997). The closed questions had a mixture of options often including an 'other' choice at the bottom of the question where respondents had the option to provide further information so as not to limit them to a pre-defined answer. For other questions, participants had to rank their answers according to their importance. Finally, the Likert scale was used for one question to identify whether the participants agreed or disagreed with the choices (Rowley, 2014). In addition to the closed questions, the open-ended questions gave the participants the chance to express themselves according to their experience (Bryman, 2012). Nevertheless, these were kept to a minimum to keep the timeframe of filling in the questionnaire between 10 – 15 minutes (Bryman, 2012).

The questionnaire was divided into four main parts (Appendix III). The first part of the questionnaire began with introductory questions related to beach users' choice

of beach, how much they frequented it, which mode of transport they used to get there, what activities they carried out at the beach and in water and to rate the quality of the beach they visited. These were followed by the beach users' familiarity with beach management processes such as a definition of a BF beach, what beach management entailed and who was responsible for such management. The third part tested the participants' knowledge about issues being faced by Malta's beaches and whether they were willing to participate or be kept informed on management decisions. The final part was related to the beach users themselves, such as their age, gender, with whom they visited the beach and their occupation. Such personal questions were put at the end of the questionnaire so as to encourage the participants to complete the remaining questionnaire prior to answering sensitive questions (Rowley, 2014).

4.4.3.2. Pilot study

A pilot study is crucial prior to administering the main questionnaire to identify any issues with the questioning (FAO, 1997; Noor, 2008; Bryman, 2012) such as:

- Personal questions which make the respondents uncomfortable to reply,
- Checking the structure and flow of the questions,
- Checking that it is easily understood by the respondents, and
- Adding or remove questions.

Hence, a pilot study was carried out in all the five case study areas between September and early October of 2016. A total of 30 questionnaires were distributed to the beach users in each case study in order to identify any changes that were required and to record the time to see how long they took to fill it in. The latter was particularly important to ensure the participants would not stop halfway or decline to do it from the start. Participants were chosen randomly by selecting every 5th person along the beach, moving in a zig zag from one end of the beach to the other. However, given that the length of the Maltese beaches is small, once every 5th person along the beach was interviewed, the researcher waited for 30 minutes and

started again. This meant that all beach users had the same opportunity to be surveyed (Bryman, 2012; The Audience Agency, 2020). The response rate of the pilot studies is outlined in Table 4.4.

Table 4.4: Pilot Response Rate for each case study

<i>Case Study</i>	<i>Number</i>
<i>Għadira Bay</i>	30
<i>Għajn Tuffieħa Bay</i>	30
<i>Ġnejna Bay</i>	30
<i>Pretty Bay</i>	30
<i>St. George's Bay</i>	12

From the feedback collected and the answers obtained, it transpired that some changes were needed regarding the flow of the questioning, and some questions were omitted because they made people uncomfortable, such as: how much they earned. In addition, due to a low response rate from St. George's Bay, this case study was also omitted from the research. Given the locality of the beach, it is mainly frequented by young foreign students who immediately declined to do the questionnaire as they wanted to drink and party, despite varying the time the researcher was there by attending on multiple occasions and at different times of the day.

4.4.3.3. Conducting the main questionnaire and its limitations

Due to the reasons mentioned in Section 4.4.3.2, the questionnaire was also put online so as to target a larger audience. Google Forms was used as a platform for the online questionnaire. A link was generated and distributed monthly on several pages on Facebook such as Din l-Art Ħelwa, Is-Salott, RUBS Travel, Are you being served? (Malta and Gozo) Original, Department of Geography, Which Beach, The GAIA Foundation and The Salott (RUBS). These pages were chosen because they have more than 1000 members each and they come from different social backgrounds. To

summarise, the main questionnaire was administered face-to-face over the summer period between July and mid-September 2017, whereas the online questionnaire was available between January 2017 and May 2018.

Given that the Maltese population is more than 400,000, the 5% margin of error was chosen when interviewing the beach users, which meant the sample required was 384 people (Creative Research System, 2012; Checkmarket, 2016; The Audience Agency, 2020). Since for the main questionnaire there were four case studies, it was decided to try and collect 100 samples from each totalling a sample population of 400. Participants for the face-to-face questionnaire were chosen randomly by selecting every 5th person along the beach, as also carried out during the pilot studies.

Since the face-to-face questionnaires were carried out over the summer months, and during the pilot study many people had refused to fill it in because either it was too hot or they wanted to relax, this time the daunting noon hours were avoided. So, the questionnaires were distributed early in the morning between 8:00 am and 10:30 am and late afternoon between 5:00 pm and 8:00 pm. Nevertheless, it was still difficult to collect the required amount even if the questionnaire was distributed out on several occasions during the week and months. This could be due to several factors such as:

- The beach users did not want to be disturbed when they were relaxing or on vacation,
- They thought that the questionnaire was too long even though most of the questions were short closed answers,
- They had the impression that I was a hawker.

Most of the time, when the beach users saw the researcher approaching with papers, they did not even let her explain what the research was about or what she was doing; they immediately refused to fill it in. Another thing that it was noticed was that when a beach user refused to do the questionnaire, the beach users in the vicinity also refused. This was most probably because they would have seen the other user

behaving that way. As a result, the time between one questionnaire and another was lengthened to try and avoid such behaviour. There were also noticeable gender differences in participation. Often when men were approached, they just handed the questionnaire over to their female partner, hence the difference in the ratio of females who replied when compared to the males is higher.

During the face-to-face questionnaires, notes of the comments that some of the beach users passed were taken. During the summer of 2017, in addition to the questionnaires, comments from people who were showing their concerns on several issues that were happening at the beach, such as complaining about the lack of free space on beaches were also collected.

4.4.3.4. The response rate for the questionnaire

Overall, the response rates and completion of the questionnaire turned out to be valid, even though a lot of beach users refused to take part. Of the 400 participants that were targeted in the second round (not including the pilot study), 308 individuals completed the questionnaire. This gave a total response rate of 77%, as further outlined in Table 4.5.

Table 4.5: Total response rates for the main and online questionnaires.

<i>Case studies</i>	<i>Face-to-face</i>	<i>Online</i>	<i>Total</i>	<i>Total (%)</i>
<i>Għadira</i>	27	62	89	89.0
<i>Għajn Tuffieħa</i>	24	60	84	84.0
<i>Ġnejna</i>	26	37	63	63.0
<i>Pretty Bay</i>	28	44	72	72.0

In both methods (face-to-face and online), the closed questions got the highest response rate when compared with the open-ended ones. This could be because the respondents wanted to finish the questionnaire as quickly as possible to limit the time taken from their relaxation mode. However, the open-ended questions that were filled in online were higher in number and their answers were further

elaborated when compared with those who filled it face-to-face. This could be mainly due to the fact that they were filling it at their own pace and in a place where they felt comfortable, away from the interviewer, unlike those who undertook it at the beach (Szolnoki and Hoffmann, 2013; Kralj et al., 2016).

4.4.3.5. Background information on the participants

In both sets of questionnaires (face-to-face and online questionnaires), the highest percentage (47% and 50%) of beach users were in the age group between 25 and 40. This could mean that the younger generation is more enthusiastic to see a change than the older generation (Felonneau and Becker, 2008; Franzen and Meyer, 2010). When seen on a case study basis, Għajn Tuffieħa was mostly frequented by those aged 25 to 40. This could be due to the long flight of stairs to access the beach discouraging older people. Conversely, both Għadira beach and Pretty Bay were frequented by all age groups, most likely due to their good accessibility.

The majority that answered the questionnaire on the beach replied that they were there with friends, partners and/or with families (including children and teenagers). Results showed that Għadira is mostly frequented by families with young children, whereas Għajn Tuffieħa is more frequented by couples or friends. This could be due to the nature of the beaches, Għadira being very accessible and shallow, while Għajn Tuffieħa is less accessible due to the long flight of stairs and it is a narrower beach which would make it more difficult to access with small children. Ġnejna and Pretty Bay are frequented by all types of people. This again could be attributed to the type of beach, since both beaches are easy to access.

Almost 50% of those who participated both face-to-face and online said they were professionals, followed by students (11.5% face-to-face and 9.3% online) and skilled workers (9.7% face-to-face and 9.8% online).

4.4.4. *Semi-structured interviews*

Further to the beach users' questionnaires, it was also important to understand the views and opinions of experts working in this field. Hence, semi-structured interviews

were also carried out with relevant stakeholders. The latter were either in key positions, such as government officials, and/or were involved in the beach management process so they could provide a clearer picture of the current situation (Rowley, 2014).

A semi-structured interview can be used to collect information on various topics, can be used together with other methods, is informal and colloquial and is quite flexible on how interviewees can be approached (Noor, 2008; Longhurst, 2016). In addition, interviewees can engage in a conversation with the interviewer rather than being restricted to a 'yes' or 'no' answer (Longhurst, 2016). Semi-structured interviews can "produce rich and detailed data sets, offering an accurate assessment of the characteristics of individuals and phenomena [...] shed light on the drivers of these events and the motivations behind user decisions" (O'Keeffe, et al., 2016, p. 1912). Additionally, it is easier to capture the responses of the interviewee through his/her facial expressions and behaviour (Kitchin and Tate, 2013).

Based on the above, it was decided to use face-to-face semi-structured interviews, given that they were the most suitable method to gather information on the stakeholders' perceptions and experiences on the topic, as well as to create a balanced rapport with them (Bryman, 2012). Semi-structured interviews also gave the flexibility to ask other questions that were not originally planned, but that were helpful in attaining the objectives. Additionally, given that the stakeholders had different roles, the researcher wanted to find out how their perceptions differed depending on the level of beach management they were involved in, as well as whether opinions changed depending on the type of sector between NGOs or experts. Key concerns for each stakeholder could also be obtained through the semi-structured interview. Therefore, a set of questions was designed according to each stakeholder (Appendix IV).

During the drafting and prior to attending the interview, the guidelines for conducting interviews as suggested by Bryman (2012) were followed, namely:

- a) questions related to beach management on the Maltese Islands were prepared, aware that flexibility was needed depending on how they were

answered, so they were designed with the possibility of skipping and/or adding other questions during the actual interview in response to the participants' answers,

- b) Questions were drafted both in Maltese¹⁰ and English so that the stakeholders had the option to choose their preferred language. Since people with different backgrounds and level of education were going to be interviewed, presenting both options meant a higher chance of participation so they would feel more comfortable expressing themselves,
- c) Further to point (b), complex, double-barrelled, difficult or leading questions were avoided,
- d) The preliminary results obtained from the beach users' questionnaires were used as a basis for designing some of the key questions.

4.4.4.1. Recruitment

As explained in Chapter Three, the involvement of stakeholders is crucial for a MP to be effective, given that they would have the knowledge and expertise, can contribute to the discussions and can implement the recommendations (Lozoya et al., 2014; Prati et al., 2016). Key stakeholders were identified from the literature review, knowledge gained working in the field, social media and from onsite observations (such as kiosk owners). Due to confidentiality, Table 4.6 shows the different categories of stakeholders and how these will be referred to in the rest of this research.

An important key stakeholder was the beach manager from the MTA responsible for the management of some of the Maltese beaches that fall under the authority's remit. This stakeholder proved to be crucial to this research as they provided important information, especially regarding the BF Award and other types of management that they are involved in, from a technical point of view. The beach manager also introduced the researcher to one of the beachhead supervisors who was responsible for monitoring all the beaches that fell under the MTA's

¹⁰ Maltese is the first language of the Maltese Islands.

responsibility on a daily basis. By interviewing the head supervisor, the researcher was able to see how management is applied from a practical point of view as she described her day to day activities.

From the literature review and social media, another four government entities also involved in the management of beaches were identified. These were officers from:

1. The Environmental Health Directorate (EHD), responsible for implementing the Bathing Water Quality Directive (2006/17/EC), and thus the officer concerned, was responsible for collecting and analysing data related to the water quality in 87 Maltese bathing sites. All of my case studies were tested for water quality,
2. The Cleansing and Maintenance Division (CMD) who were the main operators of beach cleaning as well as the installation/removal of beach furniture, such as ladders to access the water and litter bins on all Maltese beaches,
3. The Environment and Resources Authority (ERA) who are partially responsible for the beaches that fall in a NATURA 2000 site, such as Golden Bay, namely for issuing permits for beach activities and, more recently, issuing operating procedures for beach cleaning,
4. The PA who were responsible for the ICZM and MSP in Malta. The officer was also involved in the CAMP Malta project and the Coastal Topic Paper, so she was able to give a clearer picture of the subject.

During the literature review, three key experts on the subject, all of whom were currently working at the University of Malta were also identified. One of the experts is an Associate Professor at the Institute of Earth Systems and author of many published papers and books related to beach management. The second expert is a Professor in the Geography Department and is interested in beach management and maintenance. The last expert is an Associate Academic, also at the Department of Geography. This expert used to be involved in the management of beaches when he worked for the then EPD and was also involved in CAMP Malta. All three experts

provided their experience in the field and helped reducing some gaps that were found in the literature.

The social media and the literature review helped identifying other NGOs or entities who were either directly or indirectly involved with the management of beaches such as:

1. The GAIA Foundation, who is responsible for the ICZM of Għajn Tuffieħa (one of my case studies) and Ramla l-Ħamra (Gozo). They prepare yearly MPs and submit them to ERA. They were also involved in the management of Għajn Tuffieħa beach up till 2018, but it has since been taken over by the MTA due to financial issues. Thus, their input on beach management was crucial, especially with regard to the Għajn Tuffieħa beach.
2. The Majjistral Nature and History Park, which was entrusted to the association Heritage Parks Federation and covers the area from Golden Bay to il-Prajjiet Area. One of the aims of this federation is to manage the Natura 2000 sites and the ICZM within the area which falls under the GAIA Foundation, as mentioned in Point 1. However, by interviewing the site manager of this park, it was able to include another perspective of beach management.
3. Żibel, an NGO whose aim is to reduce the overall waste generated on the beach by organising clean-up activities in various locations, including the beaches.
4. LCs for the four case studies, given that the beaches fall under their jurisdiction.
5. Nature Trust, an NGO, who also represents the FEE which promotes the BF. Nature Trust takes the role from an audit point of view to see that beach managers are aligned with the 33 BF criteria. Thus, the perspective of management from an auditor's point of view could also be seen.

Finally, during the field observations in each case study, kiosk owners that were willing to participate in the interview were identified. By including them in this research it was able to see how beach management indirectly affected their jobs.

Indeed, it was very interesting to include such stakeholders, given that they are the primary users of the beach and it is in their own interest to help the concerned authorities managing them.

Table 4.6: Stakeholder's identification in this research.

Category	Stakeholders	Identifier
Experts	Professor	Professor
	Associate Academic	Associate Academic
	Associate Professor	Associate Professor
NGOs	Žibel	Žibel manager
	The GAIA Foundation	GAIA officer
	Nature Trust (NT)	NT Executive Director
	Majjistral Nature and History Park (MNHP)	MNHP site manager
	Friends of the Earth	FOE
Government entities	MTA	MTA beach manager
		MTA head supervisor
	Environmental Health Directorate	Health officer
	Planning Authority (PA)	PA officer
	Environment and Resources Authority (ERA)	ERA officer
	Cleansing and Maintenance Division (CMD)	CMD officer
Kiosk owners ¹¹	Għadira kiosks	Għadira kiosk 1
		Għadira kiosk 2
	Għajn Tuffieħa kiosk	Għajn Tuffieħa kiosk
	Ġnejna kiosk	Ġnejna kiosk
	Pretty Bay kiosk	Pretty Bay kiosk
Local Councils	Mellieħa LC	Mellieħa LC
	Birżebbuġa LC	Birżebbuġa LC

¹¹ Only those who agreed to do the interview are mentioned, as there were other kiosks who were approached but did not want to participate.

	Mgarr LC	Mgarr LC
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4.4.4.2. Conducting the interviews

The period for the semi-structured interviews lasted eight months, from March 2018 till November 2018. A total of 22 stakeholders were identified from the various sectors, entities and NGOs that work in or research beach management in Malta. Understanding the challenges of undertaking an interview (Bryman, 2012) facilitated preparations to increase the chance of conducting an effective discussion. Thus, all the interviewees (except for the kiosk owners) were contacted via email in advance to inform them about the research, indicating the main topics to be discussed and ask them whether they were willing to participate in the interview (Appendix V). Given the nature of their work and the fact that the researcher did not have/find any direct contact for the kiosks, she personally went there during their business hours and asked the owners directly whether they were willing to participate in the study. Those who agreed did the interview that same day.

Out of 22 potential stakeholders from various sectors as identified in Table 4.7, 19 took part in the interview. Three of the stakeholders (two from the LC and one NGO) did not participate as they said they were not involved in the management of beaches. Initial low responses rates meant several reminders needed to be sent and sometimes even phone calls were made to ensure that the potential interviewees had received the invitation. Also, prior to the scheduled interviews, the appointment was either re-confirmed or else rescheduled.

Table 4.7: A list of the participants that were contacted for the interview.

<i>Stakeholders</i>	<i>Numbers of interviewees contacted for the interview</i>	<i>Number of interviewees who accepted</i>
<i>Experts</i>	3	3
<i>Government Entities</i>	6	6
<i>Kiosk Owners</i>	5	5
<i>Local Councils</i>	3	1
<i>NGOs</i>	5	4
<i>Total</i>	22	19

All the interviews were carried out at the stakeholders' preferred time and place, so they could feel safe and comfortable to talk about the issues concerning them (Longhurst, 2016). The interviews that were done with experts, kiosks owners, government entities and LCs were conducted during business hours at their offices/place of work, whereas those done with the NGOs were done outside: one interview was done in a café shop, two in a public garden and one took place in the Majjistral Nature and History Park.

A set of predetermined questions were asked during the interview to identify the stakeholders' perception of beach management processes in Malta. Given that some of the interviewees had different expertise and positions in relation to beach management, different interview schedules were prepared to reflect this situation (Appendix IV). The interview contained questions on:

- The background information about the participants,
- Their involvement in beach management,
- Their perception of beach management decisions,
- The main issues being faced by Maltese beaches,
- Any changes/recommendations they would like to see in the future.

Even though the interviewees were given a brief description of who the researcher was, why she was doing the research and what the research entailed in the invitation

email, it was made sure that at the beginning of each interview the process was re-explained. Each interviewee was also presented with a hard copy of the Participation Information Sheet (Appendix VI) for them to keep as well as the Consent Form (Appendix VII). The latter explained that their participation was voluntary and that they could withdraw without justification at any time during the interview. Interviewees were also asked whether they were happy for the interview to be audio-recorded and whether their name could be quoted in the study. Finally, they were informed that the interview would be transcribed and that they would be given the opportunity to review, edit and approve the transcript to ensure accuracy prior to its analysis. Once the participant agreed to continue with the interview and the Consent Form was signed, the interview started.

The duration of the semi-structured interviews ranged between ten to one hundred minutes. It was noted that the interviews lasted longer with experts and NGO sectors, followed by government authorities, departments and LCs, then with the owners of the kiosks. This could be due to the fact that all the stakeholders, except for the kiosk's owners, were previously informed of the interview and had allocated a specific time. Conversely, the kiosk owners replied to the questions while working, thus they did not have much time. All the interviews were audio-recorded, except for one stakeholder who refused to be recorded. Nevertheless, she was very helpful and provided further feedback when the transcribed interviews were sent to her for approval. All the interviews were transcribed and sent for the participants' approval before analysis began. This was important to confirm what was said with the interviewees. In some cases, the stakeholders also elaborated on their answer. The results of the transcribed interviews are found in Chapter Six of this thesis. Only one participant chose to remain anonymous, so they are identified throughout the research according to their role, as per Table 4.6.

4.5. Data Analysis

Data analysis started with the examination of secondary data, such as documents, articles and reports that were needed to identify the best methods and tools for beach management and continued until the end of the study.

4.5.1. *Questionnaires*

Given that the methodology to collect both the pilot and the main questionnaires was the same, the results obtained were combined and analysed together to have as much information as possible. Nevertheless, since some of the questions that were featured in the pilot survey were either removed or amended in the main questionnaire, only those questions that were available in the main survey were used during the analysis (Appendix III). Conversely, the online questionnaires were analysed separately from those that were carried out in the field so as not to lose any sensitive information that a respondent might have chosen to share if allowed to remain anonymous even from the interviewer (Szolnoki and Hoffmann, 2013; Kralj et al., 2016).

Given the large amount of data from both paper and online questionnaires, it was decided to use Microsoft Excel (2016). This is because “Excel provides an environment that supports data management with a host of built-in tools for querying, analysing and reporting, in addition to its formatting, calculation and graphing capabilities” (Palocsay, Markham, and Markham, 2010, p. 192). Additionally, data can be processed very easily and there is no need to be an expert in statistics or software design to learn how to use Excel (Palocsay et al., 2010). Thus, such a tool proved to be adequate to use for this type of data and analysis. Other rigorous statistical programmes were not used, as it was not thought appropriate to go beyond descriptive statistics since the research reported in Chapter Five is descriptive in nature and does not seek to validate hypotheses empirically.

The data was analysed by first giving an identifying number to all the questionnaires, since the name of the participants was not requested. Then, all the data were input

in multiple spreadsheets according to the questions. Data were double checked for any errors during inputting and then manipulated through cross tabulation, formatting and sorting. Some questions were then analysed by using different formulas and custom filtering (such as IF and COUNTIF functions), while for others which required organising and grouping, pivot tables were used. Once the required analysis was obtained, charts and tables were used to present the results. The latter is discussed in detail in Chapter Five.

4.5.2. *Semi-structured interviews*

All the interviews were transcribed immediately after the interview took place. This was done so that the researcher could study the interview in detail and start analytic coding (Stuckey, 2014). From the literature review, some key themes that the researcher wanted to investigate further, were already identified. However, the list of themes and sub-themes increased both during the transcription of the interviews as well as during coding (Appendix VIII). All the transcribed interviews were then input into NVIVO 12 qualitative data analysis software. Each interview was read thoroughly and then coded into already identified or new nodes (themes) (Appendix IX). Node hierarchies were also created where a theme was subdivided into a sub-theme. Analysing the data through NVIVO saved a considerable amount of time and helped in summarising the data into key points. It allowed the researcher to create memos when she wanted to include a thought or a self-comment, as well as made it easier to compare different interviews within the same nodes (Bryman, 2012). Data were then presented in the form of discussions and direct quotations and were used when she wanted to highlight an important comment from the interviewees. Such results are discussed in detail in Chapter Six.

The use of questionnaires and semi-structured interviews enabled the researcher to compare between the two methods which resulted in a more reliable study. In addition, she could analyse and discuss the issues from the beach users' point of view and the management perspective. This could be done given that some of the questions that were posed, such as 'What is beach management?', and 'Who is responsible for the coast of Malta?', were similar to each other.

4.5.3. Dissemination of data findings

Dissemination of data findings not only helps to maximise the benefit of research, but it is an obligation towards all those participants and stakeholders who took part in these studies. It is good practice as well as morally and ethically important to inform them what has been done with the information that was collected from them, as well as the main outcomes of the research (Bryman, 2012).

Together with her supervisors, the researcher was invited to be co-author of a book chapter entitled 'The beaches of the Maltese Islands: a valuable but threatened resource?' The chapter featured in the Springer publication '*Landscapes and Landforms of the Maltese Islands*' which was published in 2019 (Zammit Pace, ML, Bray, M, Potts, J and Baily, B (2019) The Beaches of the Maltese Islands: A valuable but threatened resource? In R. Gauci and J.A. Schembri (eds.). *Landscapes and Landforms of the Maltese Islands, World Geomorphological Landscapes*. Springer Nature. Switzerland AG). https://doi.org/10.1007/978-3-030-15456-1_18

The researcher attended the 13th International MEDCOAST Congress on Coastal and Marine Sciences, Engineering, Management and Conservation that was held in Malta in 2017. During this conference, she delivered a presentation entitled 'Beach management review of the Maltese Islands' which was based on the literature review undertaken. In addition, a conference paper with the same title was produced. This was disseminated in the conference proceedings book (Zammit Pace, M.L., Bray, M., Baily, B., and Potts, J., (2017). Beach Management Review of the Maltese Islands in Ozhan, E. (Editor), 2017, *Proceedings of the Thirteenth International MEDCOAST Congress on Coastal and Marine Sciences, Engineering, Management and Conservation, MEDCOAST 17, 31 Oct - 04 Nov 2017*, Mellieha, Malta, MEDCOAST, Mediterranean Coastal Foundation, Dalyan, Mugla, Turkey, Vol 1-2, 1266p).

Four presentations entitled *A critical analysis of beach management on the Maltese Islands: Examining the past, looking at the present and planning for the future* have been delivered to c. 25 undergraduate students and c. 12 graduate students at the Universities of Malta and Portsmouth. Two of the presentations focused on the

knowledge gaps and problems found during the literature review and what methods were going to be used for the research, whereas the other two presentations discussed the results obtained from both the beach users' questionnaires as well as the stakeholders' semi-structured interviews. These presentations provided the researcher with the opportunity to promote her research and also gave her the chance to discuss the study in further detail with the audience through questions and answers.

Also, as part of her scholarship agreement, an article for the Maltese media outlining the findings of this research will also be written, as well as providing a soft copy of the study to the stakeholders who showed interest in receiving such information during the interviews. The results and findings will also be published in critically acclaimed journals such *Coastal Management* and/or *Coastal Conservation*, with a tentative title: 'Public and stakeholders' perceptions of the beach management process on the Maltese Islands'.

4.6. Ethical considerations

Ethics are a key consideration of any qualitative study and, given that the research itself involves the participation of beach users and stakeholders, ethical considerations were required "to protect the dignity, rights, and welfare of research participants" (Haley, 2017, p. 3). During the questionnaires and semi-structured interviews this research considered two of the core principles of social research ethics, namely: (1) Informed consent and voluntary participation and (2) anonymity and confidentiality (Haley, 2017).

4.6.1. *Informed consent and voluntary participation*

With regard to the beach users' questionnaire, potential participants were approached randomly on the beach and verbally asked whether they would like to participate in the study. For those who showed interest, a detailed Participant Information Sheet (PIS) (Appendix VI) was given to each participant highlighting the

purpose, objectives and expected outcomes of the study, information on what they were expected to do, possible advantages and disadvantages, information on data retention and they were also given my email address for further questions. Furthermore, it was made clear that the survey was entirely voluntary and that if at any point while filling out the questionnaire the participant decided that he/she no longer wished to participate in the study, they could choose not to submit their answers without a justification. Completion of the questionnaire was taken as evidence of consent.

For the online questionnaires, participants were approached through a brief introduction to the research that was uploaded several times during the year on various Facebook pages, as already discussed in Section 4.4.3.3. If participants were willing to fill in the questionnaire, they just needed to click on the link provided. A summary of the project was available with the link, explaining the purpose of the study and what their involvement entailed, as per the face-to-face questionnaires.

With regard to the interviews, potential stakeholders were first contacted via email and invited to participate in the research. Attached to the email was the PIS (Appendix VI), that explained what the research was about, as well as the Consent Form (Appendix VII) so that each participant could make an informed decision as to whether they would like to participate. The stakeholders who agreed to participate were then contacted again to arrange a time and date for the interview. A written consent form outlining that they had understood the PIS, they would like to participate and had consented to being audio-recorded and named in the analysis was obtained at the beginning of each interview.

Prior to each interview, a brief introduction to the studies being undertaken and the purpose of such interviews was given by the researcher. The Consent Form stated that interviewees had the choice to withdraw from the research at any time, explained the process of anonymity, asked them whether they wanted to remain anonymous or not, and asked whether they had any objection if the interview was audio-recorded (Longhurst, 2016). Audio-recording the interview helped the researcher to focus on the questioning as well as the behaviour and attitude of the

participant, rather than having to concentrate on writing down everything during the interview (Bryman, 2012). Understanding the stakeholders' behaviour and/or attitude towards a particular question helped her realise why they answered in such a way. For example, one of the stakeholders who worked for the government felt uncomfortable answering a specific question and she only captured this moment during the interview. Audio recording was also important later on during the transcription stage, as she could verify what was written during the interview by playing the recording multiple times. Following the interview, the stakeholders' behaviour, tone and key themes were written down to be used when analysing the transcription (Chapter 6) (Bryman, 2012; Longhurst, 2016). Finally, she also explained to them that a copy of the Consent form signed by both parties, together with the transcript of the interview, would be sent to them for approval and/or further comments. The latter was important so as to make sure that she had understood their arguments and there were no erroneous data that could possibly alter or "affect the meaning of people's replies" (Bryman, 2012, p. 13). Some of the participants also ended up adding other important things that they may have forgotten during the interview, or else gave me her updates of other issues that happened between the time of the interview and the transcription.

During the data collection period, the researcher was working for the Government Fisheries Department. Hence, some of the stakeholders were colleagues, and some of the beach user participants could have seen her on social media in video clips talking about work. Thus, based on her positionality¹², she decided to include a sentence on the PIS to explain that even though she was working in the marine sector, the research was totally independent of her work and she was not funded by them.

¹² "Positionality is the practice of a researcher delineating his or her own position in relation to the study, with the implication that this position may influence aspects of the study, such as the data collected or the way it is interpreted" (Qin, 2016, p. n/a).

4.6.2. *Anonymity and confidentiality*

Confidentiality and anonymity are considered an important ethical practice to ensure that the information about, or given by, the participant cannot be used to identify them (Ritchie, Lewis, Nicholls, and Ormston, 2013). As mentioned in 4.6.1, those completing the questionnaires were offered a verbal explanation of the research and given a PIS where it was explained that the questionnaire was anonymous and that their answers would not be linked to their identity. Moreover, they were informed that when analysed the data would be in an aggregated format so it would be impossible to trace back the individual participants. Face-to-face questionnaires were collected in a paper format and then transcribed electronically. It was ensured that both paper and online questionnaires were kept confidential and, on a password, protected personal computer with a backup on Google Drive to which only the researcher had access. In addition, after being transcribed electronically, the paper questionnaires were stored in a locked cupboard in accordance with the University of Portsmouth regulations.

With regard to the interviews, given that the research is quite a specialised topic and Malta is a small place, it was very likely that the identities of the participants could be guessed if precautions were not taken. Prior to each interview, the participants were made aware of this situation and were offered the opportunity to consent to be named. Out of 19 key stakeholders, only one preferred not to be mentioned by his/her name. Therefore, they were identified by their role rather than by their name (Table 4.4). Interviewees were also informed that data would be presented anonymously (unless they had agreed otherwise) to others at scientific meetings and when published as scientific papers and/or books. In all cases, the transcripts of the interviews were sent via email to all participants to check and amend when desired.

4.7. Reflections on the research process

As mentioned in Section 4.3, initially five case studies were chosen for this research. Nevertheless, one of them (St. George's Bay) had to be dropped given the lack of

responses from this particular beach. This beach is mainly frequented by young foreign students who want to relax and party between or after lectures. Hence, they did not want to participate in the questionnaire. For future studies, it would be ideal if the pilot study took place during the peak summer months, which are July and August, to see if the same result occurs.

The beaches on the Maltese Islands are relatively small and during summer they tend to be very crowded. While doing the interviews it was noticed that the probability of a potential participant refusing to fill in the questionnaire was higher when the previous participant had done the same. Thus, to minimise such occurrence while still choosing random participants, every 5th person, moving in zig zag from one end of the beach to the other was chosen. In addition, once the whole length of the beach was completed, the researcher would wait (c. 20 – 30 minutes) before starting again.

Another limitation was the number of responses from men. The same number of male and female participants were chosen. However, when there was a group of people or a couple and the male was approached, the latter tended to give the questionnaire to his female partner. Even though it was evident in some cases that they discussed the answers together, under the gender section they still chose 'female' as the answer. Hence, the results indicate that female participation was higher than that of males, when this was not always the case (Chapter Five). For future studies, the researcher would take note when such an approach occurs and, in the results section, another category, 'couple' would be included.

Given that the participants were chosen randomly, both locals and tourists had the same amount of probability to be recruited. This caused two problems: (1) on the beach more locals were willing to fill in the questionnaire while most of the tourists who were approached refused to do it for various reasons: either it was too hot, they were on a holiday, the survey was too long, they were just going for a swim or maybe they felt that being tourists meant they did not have enough local knowledge to complete it, (2) when tourists did fill in the questionnaire, they did not mention their home country but they put the name of the locality they were staying in even though it was explained that the researcher was looking for both tourists' and locals'

opinions. During the analysis period, it was difficult to differentiate between the tourists and the locals from their responses, unless their locality was actually written down. If the questionnaire was to be repeated, there would be a change in the design of the question to make it clearer and would take note after each survey of their nationality (if they did not write it down).

Due to the very hot weather conditions during the summer, the questionnaire distribution was restricted to early morning and late afternoon/early evening. This could have skewed the results since the participants who were at the beach in the afternoon were not interviewed. Nevertheless, to minimise this limitation, questionnaires were also put online so that the public could fill them in at a convenient time.

4.8. Summary

This chapter presented a reflexive account of the research design, methods used and the ethical issues involved in undertaking the research. The first part of the chapter described the rationale for the research, the research design and provided a justification for why both qualitative and quantitative methods were used. By using a mixed-method approach it enable different types of data (questionnaires and semi-structured interviews) to be collected and enable a comparison between the two methods, which will result in a more reliable study. In addition, the first part also gave a description of the five case studies that were chosen and an explanation of why one of the case studies (St. George's Bay) was dropped. Given that beaches have different characteristics and attract different users, using multiple case study approach is important so that beach management plans can be prepared specifically for that particular beach.

The second part of the chapter narrated how the four types of data were collected, namely desktop studies, field observations, beach users' perceptions through questionnaires and stakeholders' opinions via semi-structured interviews. This section further explained the design of the questionnaires and interviews, how both

beach users and stakeholders were recruited and how the surveys were undertaken. This research emphasises the importance of understanding and involving both the beach users as well as the relevant stakeholders through out the whole process as they are the prime users, they are knowledgeable about the area and there is a higher chance that they will accept any changes if they are involved in the process.

The last part of the chapter focused on the analysis of the data collected both from the questionnaire and the semi-structured interviews and also highlighted how data findings were disseminated. This was followed by the ethical considerations that were undertaken prior to conducting the questionnaires and interviews and ended with some reflections on the research process. The results obtained from the data collection outlined in this chapter can be found in Chapters Five and Six.

Chapter Five: Investigation of public attitudes and aspirations towards beach management

5.1. Introduction

As discussed in Section 2.2.4, public participation can contribute towards effective beach management and, by involving the public from the beginning, there is a higher possibility that MPs are accepted (Ariza et al., 2014; Prati et al., 2016). Nevertheless, it is also known that even though various studies show that public participation is important (Roca and Villares, 2008; Prati et al., 2016; Peña-Alonso, Ariza, and Hernández-Calvento, 2018), their opinions are seldom taken into consideration (Sardá et al., 2015). This could be due to the complex process, which is costly and time-consuming, which sometimes managers find difficult to implement so they disregard it completely (Marzuki, 2015; Soriani et al., 2015). Chapter Five therefore presents the analysis of data that were gathered from the face-to-face questionnaires which sought to understand beach users' perceptions of beach management in Malta by focusing on the four case studies (Għadira, Għajn Tuffieħa, Ġnejna, and Pretty Bay) as well as through the online questionnaires using Google Forms. The questionnaire had a mixture of single and multi-option questions, Likert scale questions and open-ended questions.

The Chapter is divided into three sections. Section 5.2 examines the choices taken by the beach users in selecting that particular beach, followed by Section 5.3 which discusses beach users' familiarity with beach management. Section 5.4 analyses their perception on how to improve the Maltese beaches. The results obtained from this analysis will then be compared with those obtained from the stakeholders through the semi-structured interviews (discussed in Chapter Six). This will help in identifying key issues and propose recommendations for effective beach management in the Maltese Islands.

5.2. Becoming acquainted with the participants

It was important to understand the behaviour of the participants to be able to build a picture of beach use and access. This included their preference in choosing a beach,

how they travelled there, how many times they visited that beach over a one-month period, what type of activities they carried out both on the beach (such as reading and sunbathing) and in the sea (such as snorkelling, and swimming), how they rated the quality of the beach on criteria such as accessibility, clean water and family friendliness and their perception of the number of people on the beach in general during summer. Such questions were asked first to get the attention of the participants and break the ice as well as to reduce the possibility of wandering off-topic in later questions (Bryman, 2012).

5.2.1. *Locality of the participants*

It was important to ascertain whether the participants were local or holidaying from abroad. They were therefore asked to tick between Malta and Abroad and write down the locality they came from¹³. In addition, tourists were asked to put down both their home country as well as the place where they were staying in Malta. This question was asked for two purposes: 1) to determine if distance affected people visiting a beach, 2) to compare results between locals and tourists. Nevertheless, during the analysis most of the tourists could not be identified since most of them wrote only the locality they were staying while visiting Malta (as explained in Section 4.7). Hence, the data from this question was only used to determine if distance influenced which beach the participants chose.

¹³ Given the numerous amounts of locations, the researcher divided the localities according to the Local Plans.

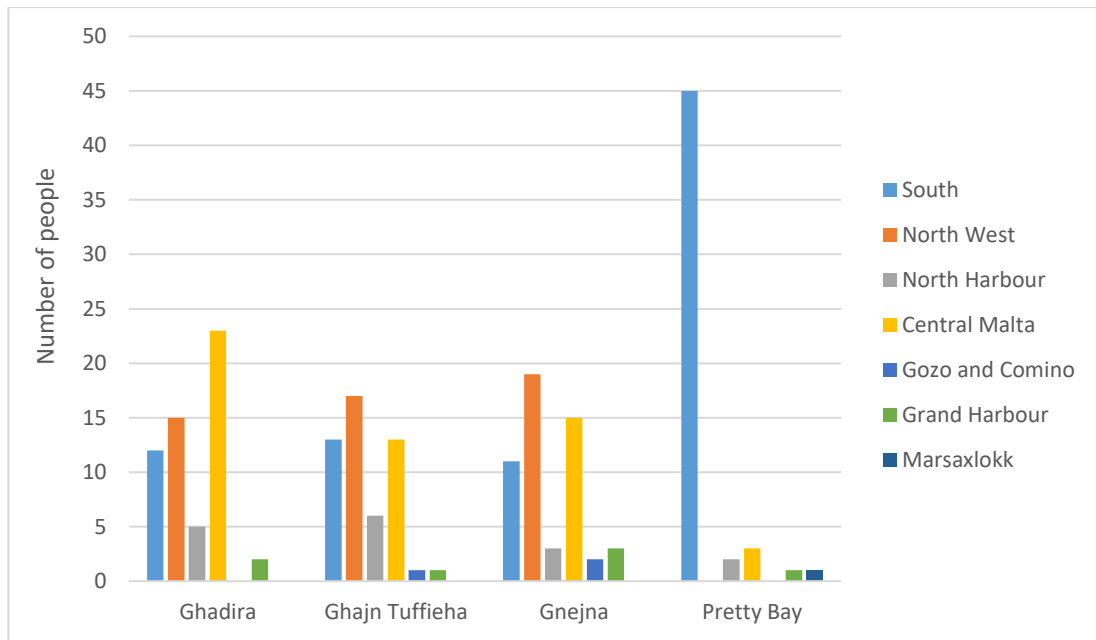


Figure 5.1: Locations of the participants (face-to-face questionnaires)

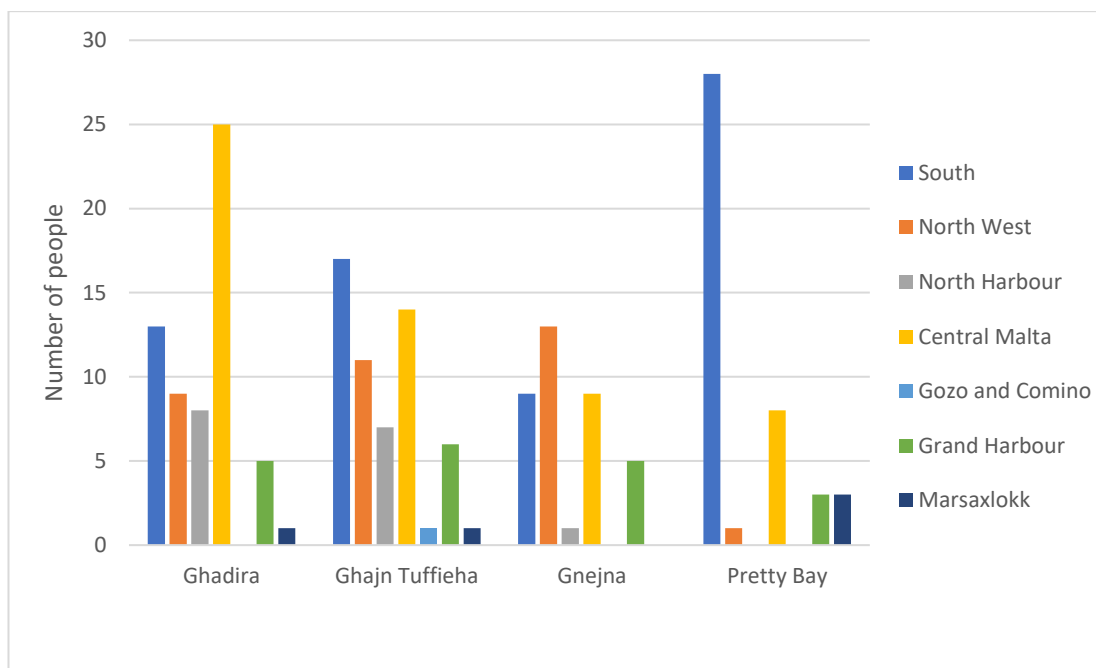


Figure 5.2: Locations of the participants (online questionnaires)

As can be seen from both Figures 5.1 and 5.2, people from south and central Malta preferred travelling longer distances to go to the beaches in the north of Malta. This was most probably because the beaches in the north are presumed to be cleaner, much more attractive and natural, based on the respondent's replies as further explained in Sections 5.2.2 and 5.2.7. Conversely, Pretty Bay was frequented mainly by the people living in the south, most probably due to its proximity as explained in

Sections 5.2.2 and 5.2.7, and given that at the time of writing it was the largest beach in the south. However, it was rare to find people from the north of Malta visiting this beach. This could be because the people from the north had more beaches locally near them and so they chose proximity, or due to the fact that Pretty Bay is located in a port and so it is not as attractive as those located in the north, which have a scenic view and are seen as natural. Similar results were obtained in other countries, such as parts of Italy that were studied by Marin et al. (2009), Wales and Portugal as studied by Vaz et al. (2009), parts of Europe and the Caribbean as examined by Botero et al. (2013) and Mexico as discussed by Mendoza-González et al., (2018). In these studies, beach users preferred a beach due to its proximity in urban areas and for its scenery in rural areas. Thus, understanding beach users' preferences could help the relevant authority develop MPs specifically for each beach, given that the latter attract different users and as such all cannot be managed in the same way (Zielinski and Botero, 2019). The reasons behind the choice of location of a beach can be identified in Question 2 (Section 5.2.2).

5.2.2. Preference in choosing the beach

Participants were to indicate as well as rank their three preferences for choosing to go to the beach where they participated. Previous studies carried out by various authors, including Cervantes and Espejel (2008); Roca and Villares (2008); Marin et al. (2009) and Saayman and Saayman (2017), have shown the importance of identifying beach users' preferences, as this enables relevant authorities to plan and manage the beach accordingly by focusing on specific issues such as litter, accessibility and facilities.

This question was analysed in two parts: the first part showed all the variables for each case study. Given that respondents had to rank their choice, a total score¹⁴ was obtained for each variable (Figures 5.4 and 5.5). In the second part of the analysis, the variables were classified into five themes, which presented the results in a

¹⁴ For each variable a score was obtained by multiplying the first most important choice by the value of 3, the second by 2 and the third most important was multiplied by 1. The scores obtained for each rank were then summed up to obtain the final score.

categorical approach (Figures 5.9 and 5.10). These variables were based on similar themes that beach users tend to prefer for choosing a beach. By looking into these five themes, the beach managers would be able to decide whether a beach is preferred for its environment or accessibility, for example, and they can integrate such results within the MP. The five themes were:

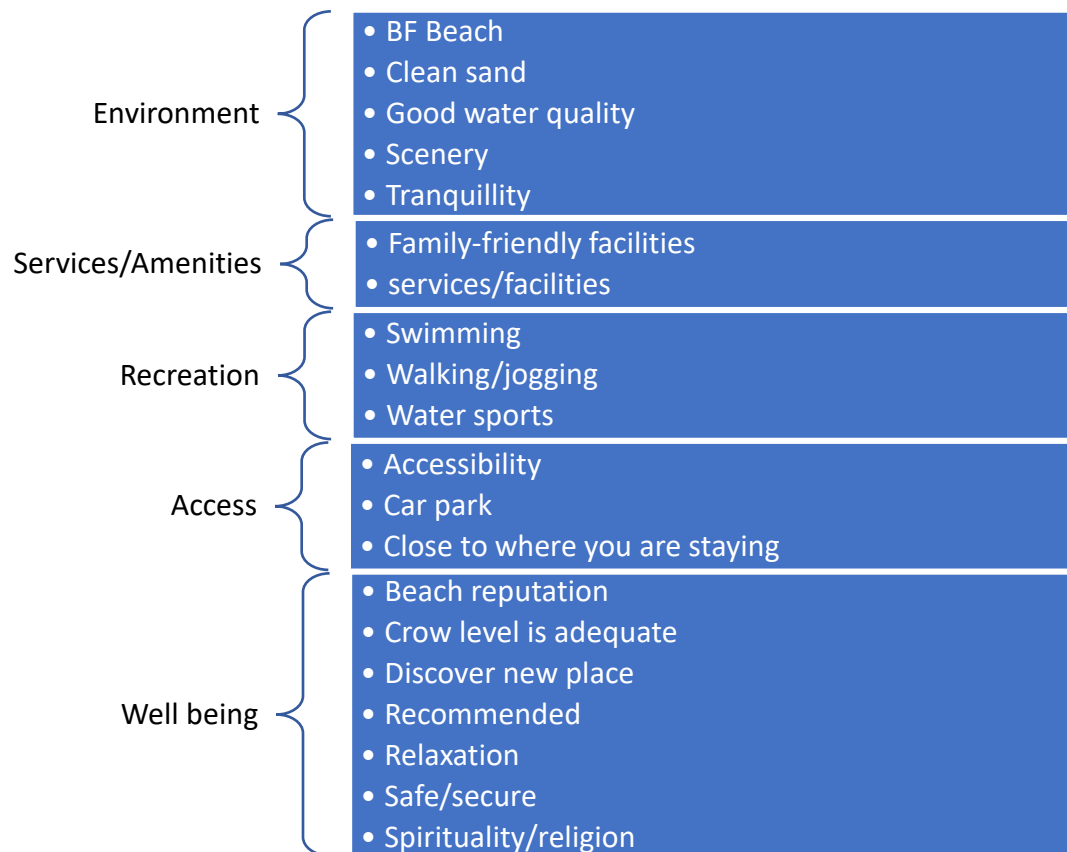


Figure 5.3: Shows the five themes used

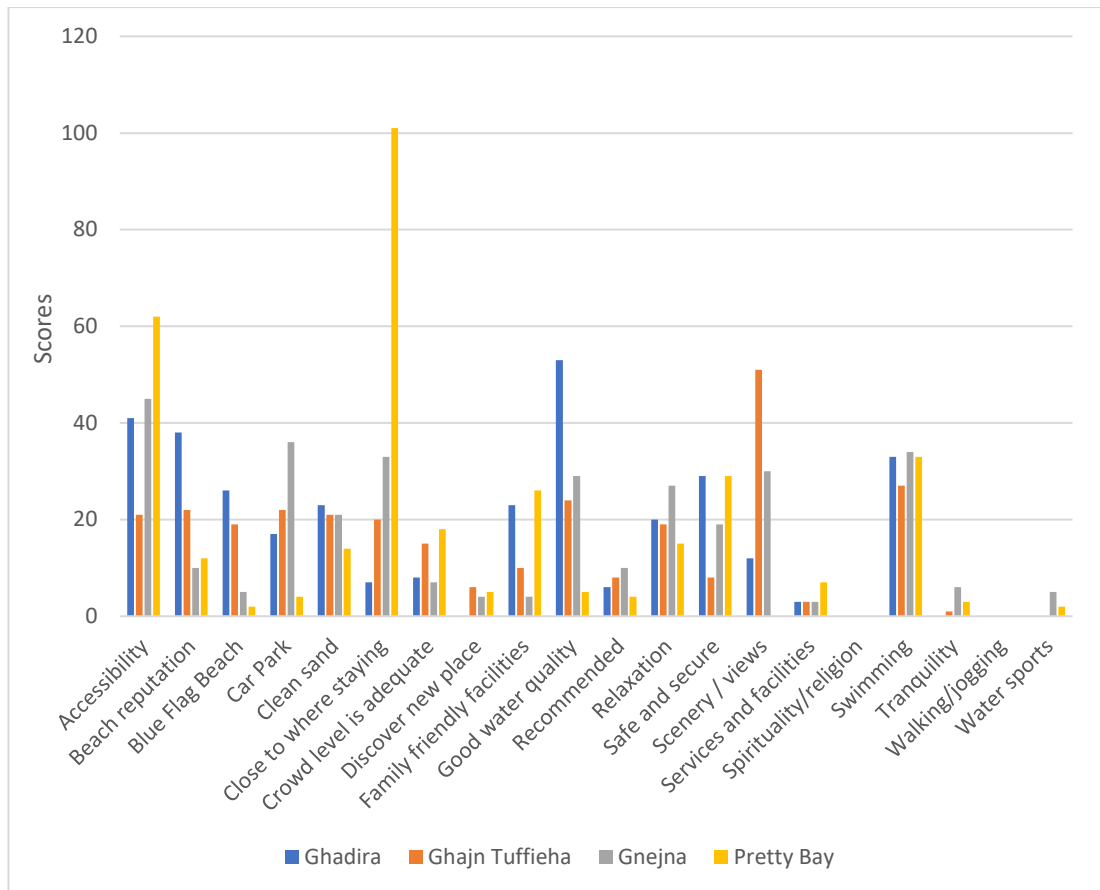


Figure 5.4: Shows the final score for each variable (face-to-face questionnaires)

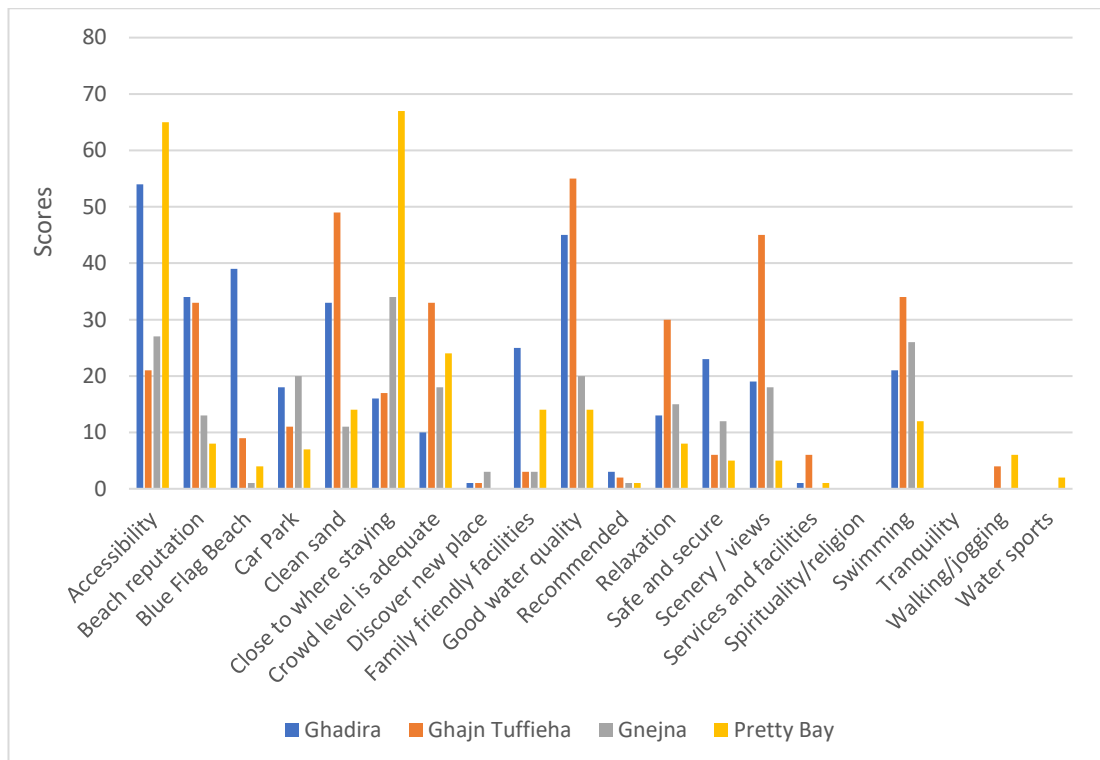


Figure 5.5: Shows the final score for each variable (online questionnaires)

Good water quality and accessibility were the highest scores for Għadira for both the face-to-face and online questionnaires. This could be attributed to the white sand which makes the water look crystal clear and the fact that it is very low lying, thus people can easily reach it (Figure 5.6). In fact, one of the users commented that “it is a good beach to go to with family, especially with small children, due to good accessibility” and several others argued that “the water is clean”. In addition, in a subsequent question (Section 5.2.7), Għadira was chosen for its clean water and family friendly facilities. A study by Roca et al. (2008) in Costa Brava, showed that the colour of the sand is thought to influence the perception of beach users, with the public preferring golden sand and blue waters. With regard to Għajn Tuffieħa, the beach users who were interviewed on the beach chose 'scenery' and 'swimming', whereas those who answered it online preferred it for its 'good water quality' and 'clean sand' (Figure 5.7). The difference in results could be attributed to the fact that the online respondents chose those attributes that could be easily remembered, such as the sand and the water. Ġnejna scored high for its accessibility, car park and its proximity to the beach users' location (Figure 5.8), whereas for Pretty Bay, both face-to-face and online respondents chose it because it is close to where they live and is easily accessible (Figure 5.9).



Figure 5.6 shows the low lying white sandy beach of Għadira (Source: Author, 2018)



Figure 5.7 shows the natural bay of Għajn Tuffieħa (Source: Author, 2018)



Figure 5.8 shows the easy access and parking to Ġnejna beach (on the right) (Source: Author, 2018)



Figure 5.9 shows the urban area and accessibility to Pretty Bay (Source: Author, 2018)

What became apparent in the analysis was that even though two of the beaches (Għadira and Għajn Tuffieħa) were awarded the BF, there seemed to be no indication of people visiting that particular beach because of the award. This seems to support the studies that were undertaken in South Africa by Lucrezi et al. (2015) and in Ontario by Klein and Dodds (2018), where those beach users who were interviewed did not visit the beach because it was a BF, unlike what managers thought. Nevertheless, ironically, beach users still chose 'cleanliness' and 'good water quality', two attributes which are usually assigned to the BF. As further explained in Section 5.3 and in agreement with Lucrezi et al. (2015), this shows the lack of public knowledge on BF. Results showed that beach users preferred a beach because it is clean, accessible, had great scenery and is in close proximity to their location. Previous research undertaken in Florida has also indicated that factors such as scenery/environment and proximity were more important for choosing that beach than due to its award (McKenna et al., 2011).

The second part of the analysis shows the results divided into five themes as per Figures 5.10 and 5.11.

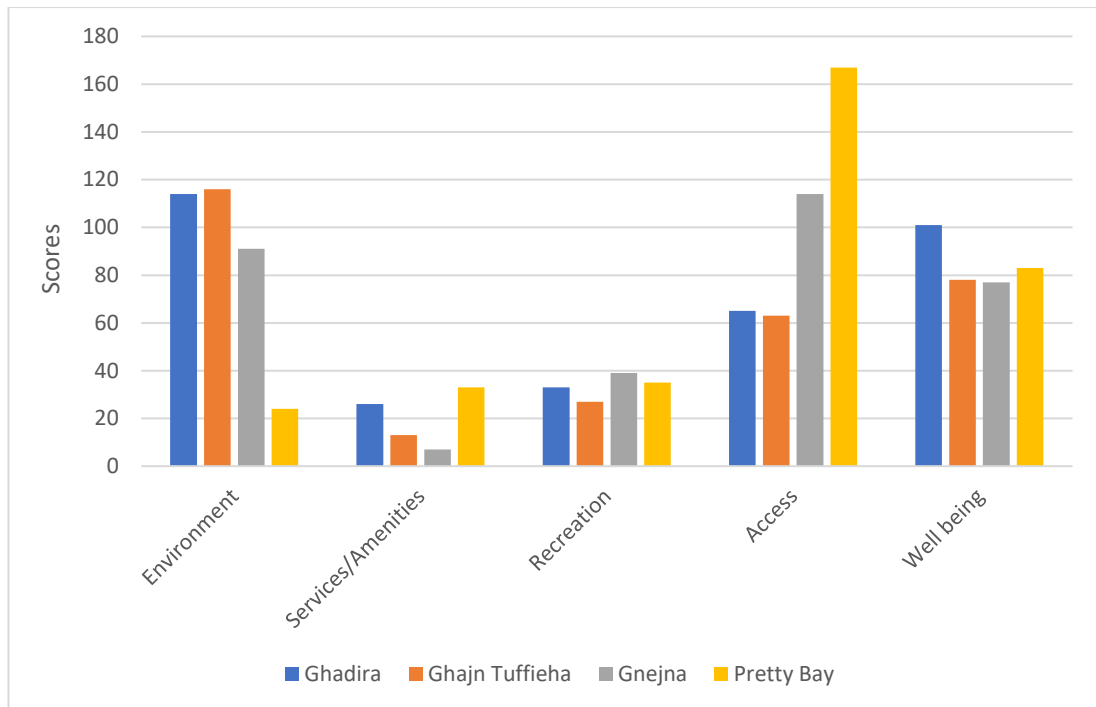


Figure 5.10: Shows beach users' choices in selecting a beach (face-to-face questionnaires)

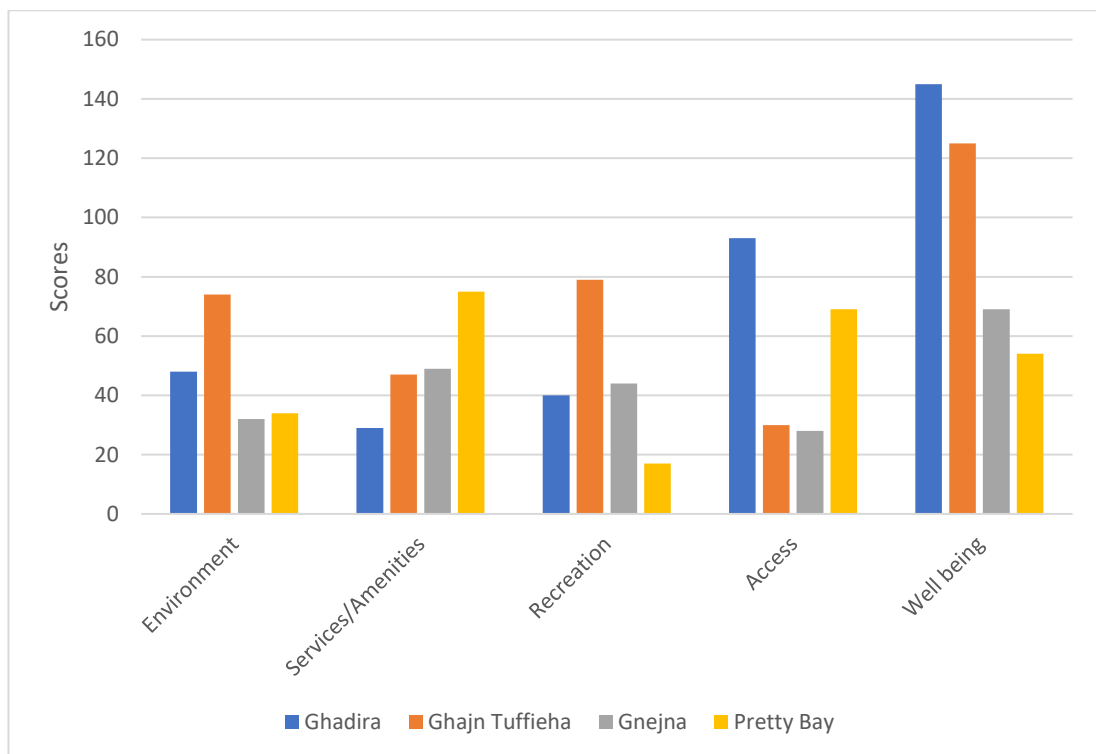


Figure 5.11: Shows beach users' choices in selecting a beach (online questionnaires)

Figure 5.10 shows that both the beaches of Ghadira and Ghajn Tuffieha were chosen for their environment, while Gnejna and Pretty Bay were preferred for their accessibility. Conversely, Ghadira, Ghajn Tuffieha and Gnejna scored the lowest for

their services/amenities and Pretty Bay scored low for its environment. Regarding those who replied online (Figure 5.11), they preferred Ghadira, Ġhajj Tuffieħa and Ġnejna for their well-being (relaxation, recommended, safe) and Pretty Bay for its service/amenities followed by its accessibility. However, Ghadira scored lowest for services, while Ġhajj Tuffieħa and Ġnejna got low scores for accessibility and Pretty Bay for its recreation. In this case, there was a big difference in results between those who answered face-to-face and those who did so online. This could be due to the fact that those who answered face-to-face were experiencing the beach at first-hand and so mentioned things that they could actually see such as scenery, good water quality and great accessibility. Conversely, those who answered it online gave their experience from what they could remember, or what had made an impact while visiting the beach, such as whether it was safe and had great services and facilities. Another explanation could be that the face-to-face respondents had me in front of them, so their answers were based on what they thought would please me, a phenomenon known by researchers as 'Social Desirability' (Szolnoki and Hoffmann, 2013; Kralj et al., 2016).

The questionnaire results showed that the three northern beaches (Ghadira, Ġhajj Tuffieħa and Ġnejna) were preferred for their environment and well-being aspects. This meant that beach users who frequented those beaches chose them due to their clean sand, scenery, good water quality, for relaxation and based on a recommendation or their reputation. The results obtained from this question seem to be in agreement with other studies carried out on the Maltese Islands by Micallef and Williams (2004), in Italy by Marin et al. (2009), in Portugal by Semeoshenkova and Williams (2011) and in Europe and Caribbean by Botero et al. (2013). These studies suggested that safety, water quality, facilities, scenery/surroundings and absence of litter were the five parameters that beach users preferred when choosing a beach. Micallef and Williams (2004) and Williams and Micallef (2009) also developed a classification system (BARE) and proposed that these five characteristics were rated highest by beach users, so any issues in the area should be given priority, as they would improve the overall quality of the beach most noticeably.

Conversely, Pretty Bay was preferred for its services and facilities as well as its accessibility. This is due to the fact that Pretty Bay is located in an urban area, so it is easily accessible and has other services such as football ground, playground and various restaurants in the vicinity. However, Pretty Bay scored low for its environment and recreation. This is because it is also located in a port, with the Freeport being just 600 m away from the beach, and water sports were not available. Conversely, Ġħadira, Ġnejna and Ġħajn Tuffieħa beaches scored low for their services and amenities and the last two beaches also scored low for their accessibility. This could mean that beach users prefer well-being and environmental aspects over services/amenities. However, given that Pretty Bay was the only large sandy beach in the south during the study, beach users did not have an alternative option to Pretty Bay.

5.2.3. *Mode of transport*

According to Eurostat (2019), in 2016 Malta had between 550 and 650 private passenger cars per 1000 inhabitants. For a small island like Malta, these numbers are very high. This is made even worse during the summer season, when the number of tourists' peaks (c. 2.5 million a year). Tourists usually opt for rented vehicles rather than public transport due to the latter's inefficiency and there are no other alternative transport modes (such as railways). This inflates the number of cars per passengers (Eurostat, 2019), which increases current problems such as pollution, traffic and lack of parking space. It was therefore important to identify which mode of transport beach users used to travel to the beach, as represented in Figure 5.12.

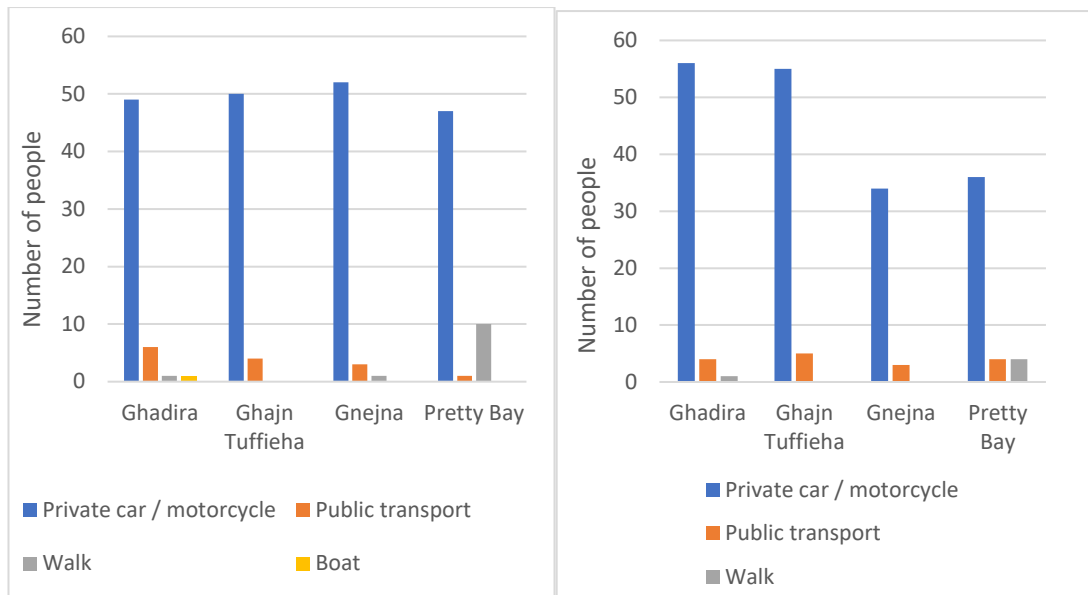


Figure 5.12: Mode of transport (face-to-face questionnaires (left); online (right))

Across the responses, about 88% (face-to-face) and 89% (online) of beach users chose a private car as their preferred mode of transport. It is to be noted that private car also included rented cars, with the latter being very popular with tourists who visit the Islands (Eurostat, 2019). Conversely, public transport only amounted to less than 10% (6% face-to-face and 8% online) for all respondents. The use of public transport is not very popular with the locals due to historical problems such as insufficient routes, lack of buses to accommodate all the people and a low level of service (Attard, 2012). These problems have created a lack of trust among many locals which has increased the use of private cars even more (Attard, 2012). However, this may not be the only reason. In a study carried out by Mifsud, Attard, and Ison (2017), no relationship was found between factors such as health perception, education levels and distance to bus stops and the choice whether to drive or not. Thus, it was concluded that driving in Malta could be attributed to habitual practice. Also, other studies (Schmocker, Quddus, Noland, and Bell, 2008; Mifsud et al., 2017) have suggested that “when a car was available in the household, public transport use tended to be lower” (Mifsud et al., 2017, p. 30). In fact, studies show that in Malta, the use of public transport is “not yet an adequate alternative to the car” (Mifsud et al., 2017, p. 30). This problem is not limited to Malta. Studies that were carried out in the Costa Brava by Roca et al. (2008) showed that when places could be accessed both by private cars and public transport, three quarters of the beach users chose to

use their private car, even though car park facilities were limited. This is an issue that therefore needs addressing when considering future management of the Islands' beach resources.

Only 2% of beach users from Għadira and Ġnejna chose walking as their mode of transport to reach these locations and no one chose this option for Għajn Tuffieħa. These results were expected, considering beach users' preference to use their car even for small distances. The users who walked to the beach were more likely to be those that were residing in nearby hotels/accommodations. For instance, in Għajn Tuffieħa beach, there is no accommodation in the vicinity except for a 5-star hotel which is located circa 600 m away on another beach (Golden Bay). In this regard, people residing in this hotel prefer to go to Golden Bay rather than to walk to Għajn Tuffieħa beach. Conversely, 17% (face-to-face) and 9% (online) of the respondents preferred to walk to Pretty Bay. As mentioned in Sections 5.2.1 and 5.2.2, this could be due to the beach being located in a low-lying urbanised area, thus, people can easily reach the beach on foot. This is similar to previous studies that were carried out in Costa Brava by both Roca et al. (2008); and Roca and Villares (2008), where the researchers also indicated that most of the beach users preferred to walk to the beach when they lived or stayed close by and use private cars when the beach was far away.

From the face-to-face questionnaire, a couple of beach users had expressed their frustration that even though they went to the beach early in the morning, they still found the parking facilities full. In this case the demand for car park facilities is very high, but as mentioned previously, people still choose private cars over public transport (Roca et al., 2008). In this regard, it could be worth looking deeper at this problem and suggest alternatives such as parking facility fees and the use of park and ride options to reduce the problem at source.

5.2.4. How frequently do the participants visit the beach?

Understanding how often the participants visited the beach was essential in terms of building a picture of beach use and to understand the strain that this would put on

the beach resources. MPs need to factor for the footfall that beaches receive. In Question four, the beach users were asked how many times they visit the beach.

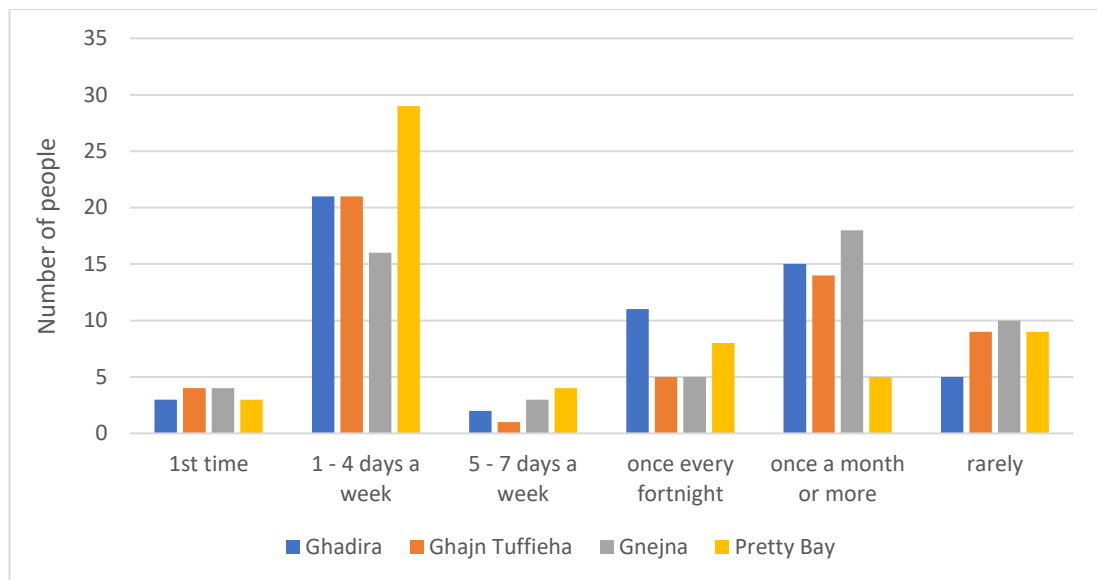


Figure 5.13: Beach users' frequency to the beach (face-to-face questionnaire)

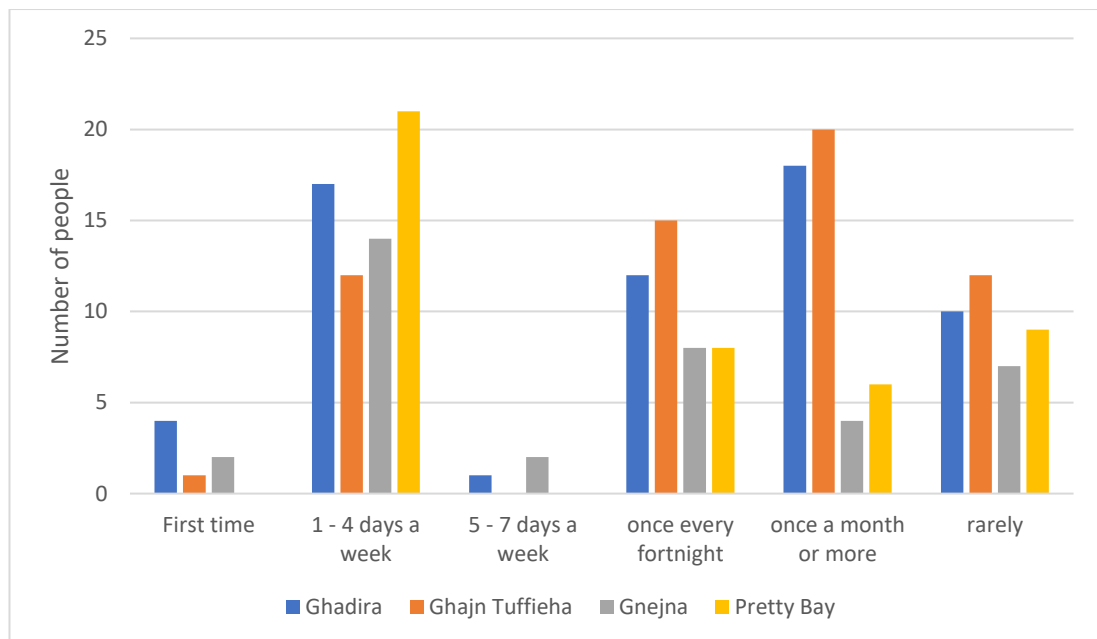


Figure 5.14: Beach users' frequency to the beach (online questionnaire)

Figure 5.13 shows that the majority of beach users frequented the beaches between one and four days a week in all the case studies except for Ġnejna, which was mostly frequented once a month or more. With regard to those who replied online (Figure 5.14), Ġnejna and Pretty Bay were visited between one to four days a week and Ġhadira and Ġhajjn Tuffieħa beaches were visited once a month or more. Such results

could be due to two reasons: 1) since most of the locals work during the week, they are only able to visit the beach during the weekends or in the late afternoon, or 2) given the options they had to choose from, they chose once a month or more as it included all options.

5.2.5. Activities carried out on the beach

Understanding beach users' motivations for going to a beach can help managers in identifying any spatial conflicts between different users, as well as improving the management of such aspects (Marin et al., 2009; Maguire et al., 2011). This can result in a better public acceptance of any changes that might occur in order to improve such activities (Botero et al., 2013). The first part of Question five requested the beach users to indicate what type of activities they carried out on the beach. Participants could choose as many options in their answers as were relevant. The results are summarised in Figures 5.15 and 5.16.

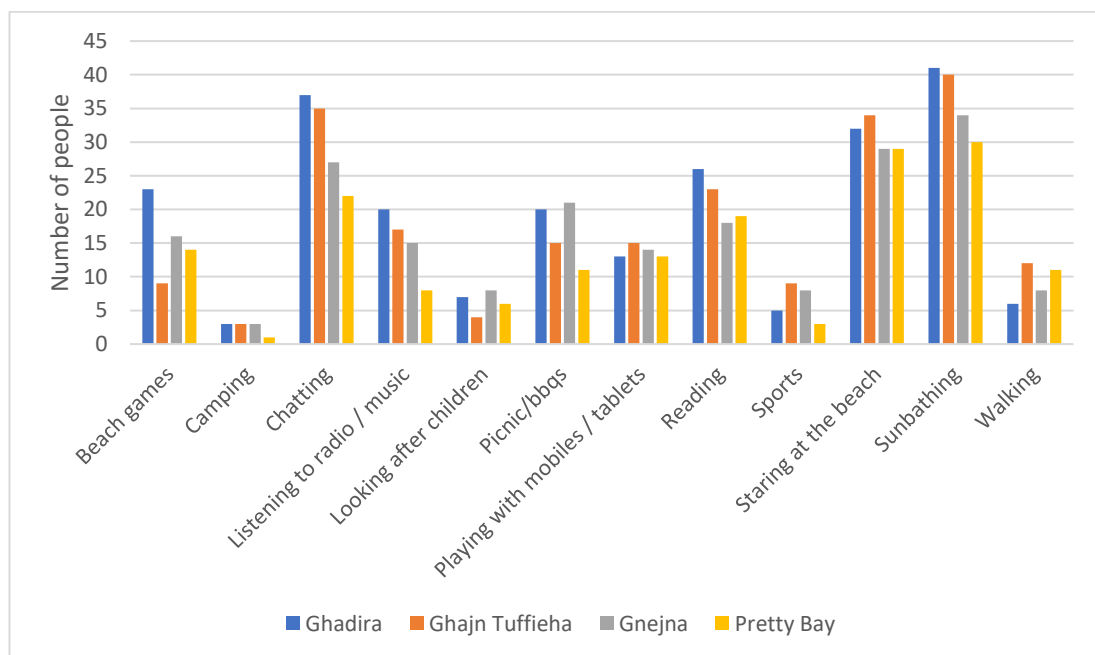


Figure 5.15: Activities carried out on the beach (face-to-face questionnaires)

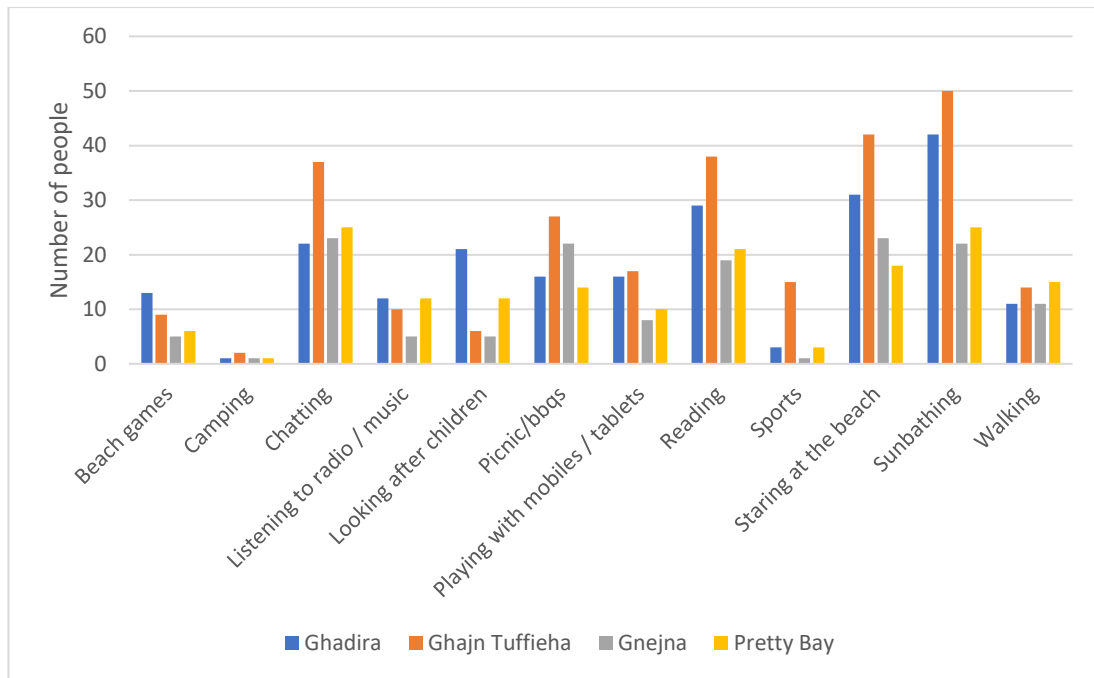


Figure 5.16: Activities carried out on the beach (online questionnaires)

From the results, it is clear that sunbathing gained the highest score for all cases (18% for both face-to-face and online questionnaires), similar to the studies carried out by Marin et al. (2009) in the Ligurian region and Lozoya et al. (2014) in Costa Brava. This was followed by chatting (15%) and staring at the beach (15%) for face-to-face users and reading (14%) and staring at the beach (14%) for the online beach users. Conversely, beach games and sports were the least favoured amongst the activities. This could be either due to the fact that beaches are too small and too crowded to carry out such activities, or else due to the hot weather people prefer resting and/or doing less energy-consuming activities. Similar results were also obtained in parts of Italy, where beach users preferred passive activities rather than doing sports (Marin et al., 2009).

Additionally, it is interesting to note that even though camping and barbeques are prohibited on beaches, especially on BF beaches (Ghadira and Ghajn Tuffieha), in both instances more than 25% of beach users chose 'barbeques and picnics' and circa 2% said they camped. This shows that after the BF office hours (after 6 pm), people still camp and have barbeques on beaches as there is no enforcement.

5.2.6. Activities carried out in the water

The second part of Question five asked the beach users to indicate what type of activities they carry out in the sea. The respondents had seven choices to select from and could choose more than one option. The results are presented in Figure 5.17.

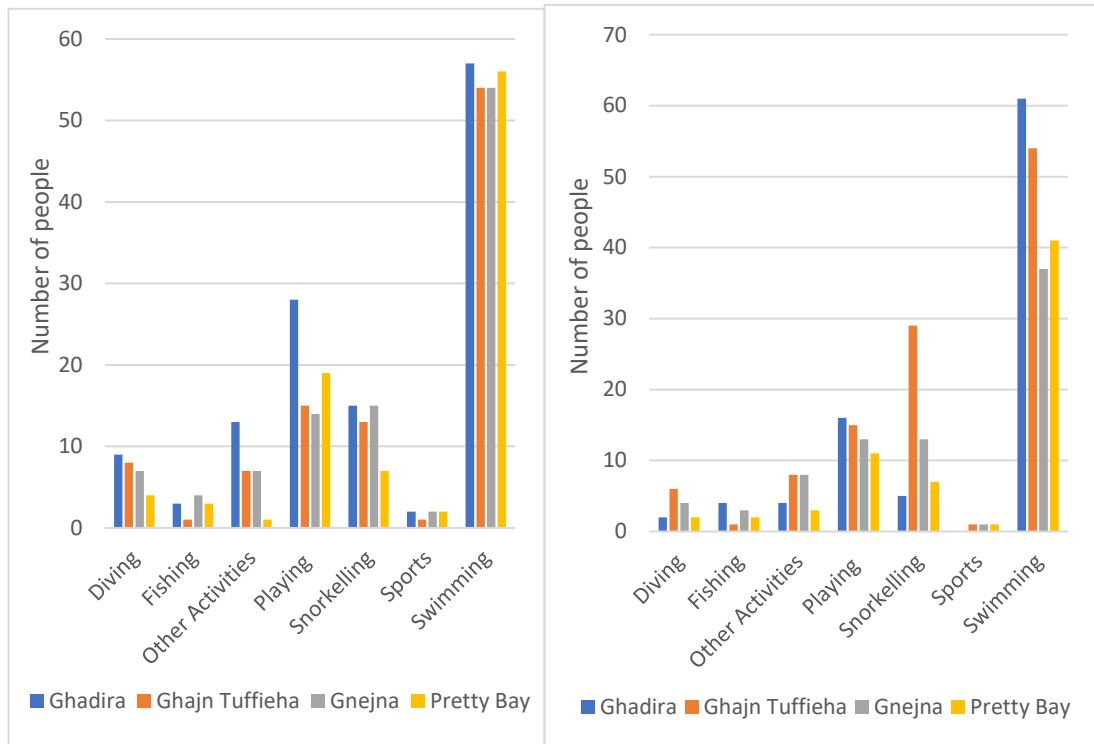


Figure 5.17: Activities carried out in the sea (face-to-face questionnaires to the left and online to the right)

The results showed that 'swimming' was the most preferred sea-based activity, with more than 50% of the beach users who were surveyed choosing this option in each case study. This is similar to the studies that were carried out by Lozoya et al. (2014), who conclude that such activity is expected on Mediterranean beaches due to their sun, sand and beach characteristics. This was then followed by 'playing' (18% face-to-face and 16% online) and 'snorkelling' (12% face-to-face and 15% online). In Ghadira 'playing' was more popular than in other case studies probably due to the large and very shallow beach, as such there is more space to play games than the other three beaches. In addition, it was noticed that 5% of all the respondents marked 'fishing' in all case studies. From the questionnaires, it is unclear whether this activity took place inside the swimming zones (which is prohibited) or out at sea.

However, while conducting the questionnaires during the evening, I observed some people fishing in swimming zones when beach managers were gone. As outlined in Section 5.2.5, such activities occur due to lack of enforcement. If fishing activity takes place in a swimming zone, this could be a hazard to the bathers. Thus, it is important to understand beach users' preferred activities, so that these can be spatially allocated in the MP. In fact, from the results and from the respondents' feedback, it was observed that users would want to have activities such as barbeques, camping, dogs on beach and fishing as part of the beach management. In fact, some of the respondents also suggested that these activities are part of the Maltese culture and so these should be allocated a space on the beach.

5.2.7. Beach users' perception of beach quality

According to Semeoshenkova and Williams (2011, p. 1282), "there is a specific need to address beach quality, as overcrowding can result in excessive litter, reduce water quality and consequently reduce the socio-economic value of the area". When investigating beach users' perceptions of beach quality, the results showed that each beach was preferred for different criteria, but similar problems and concerns were highlighted for all case studies. The six most important factors in all case studies were: 1) whether the beach was family friendly, 2) whether it had clean water, 3) whether there were clear swimming zones, 4) the quality of the environment, 5) how clean the beach was, and 6) accessibility. In contrast, the three factors that scored lowest were 1) the number of parking spaces, 2) the amount of noise, and 3) whether there were any sports/activities (Table 5.1). This is similar to the findings obtained by Semeoshenkova and Williams (2011) when assessing the beach quality in Eastern Algarve, Portugal. Semeoshenkova and Williams (2011) observed how clean water and sand and the environment obtained high satisfactory scores, whereas parking and kiosk availability scored lower results. They also suggested the importance of swimming zones and other information being placed at each beach to improve the perception and knowledge of beach users. With regard to the swimming zones and information signs, these are already available at almost all beaches around the Maltese Islands. However, this research observed that even though there were signs

and information at the entrance to beaches, the participants did not make much use of them and so other alternatives such as interactive experiences or the use of social media should be promoted (Lucrezi et al., 2015; Uittenbroek et al., 2019).

Għadira beach scored highest for being family friendly, having clean water, for its environment and its swimming zones. This beach was frequented mainly by families with young children, most probably due to its shallow and crystal-clear waters. Thus, parents felt confident and safer in taking their children to this beach. Conversely, even though Għajn Tuffieħa was also frequented by families with young children, it was not rated for its family friendly characteristics, but scored high for its environment, clean water and beach and its swimming zones. One of the reasons that family facilities scored low could be due to the lack of accessibility, making it harder for families with young children to reach the beach. It also has a small beach area when compared to Għadira and Pretty Bay (both recommended for families) and is known for its rip currents, which could be hazardous. However, during field observations I could still see a couple of families with children on the beach of Għajn Tuffieħa, but these were mainly tourists. The reason could be due to the lack of awareness by the tourists about the beach and its characteristics and, given that this beach is recommended as one of the best beaches in Malta, tourists would want to experience it.

With regard to Ġnejna beach, it scored highest for its accessibility, clean beach and water, the environment and swimming zones. Roca and Villares (2008) discuss similar findings in their study in Costa Brava, where users placed most importance on clean water and sand. Conversely, Pretty Bay scored highest for its accessibility, being family friendly and swimming zones.

Table 5.1: Shows the three highest and three lowest satisfactory scores for each case study for both face-to-face and online questionnaires.

<i>Case study</i>	<i>Face-to-face</i>		<i>Online</i>	
	Highest	Lowest	Highest	Lowest
<i>Għadira</i>	Family friendly	Parking spaces	Environment	Parking spaces
	Clean water	Noise	Family friendly	Sports/Activities
	Swimming zones	Sports/Activities	Clean water	Noise
<i>Għajn Tuffieħa</i>	Environment	Sports/Activities	Environment	Sports/Activities
	Swimming zones	Parking spaces	Clean water	Parking spaces
	Clean beach	Accessibility	Swimming zone	Noise
<i>Ġnejna</i>	Accessibility	Sports/Activities	Environment	Sports/Activities
	Clean beach	Parking spaces	Swimming zone	Parking spaces
	Clean water	Noise	Clean water	Services/Facilities
<i>Pretty Bay</i>	Accessibility	Parking spaces	Accessibility	Environment
	Family friendly	Sport/Activities	Swimming zone	Sports/Activities
	Swimming zone	Clean water/environment	Family friendly	Parking spaces

With regard to the lowest scores, it is interesting to note that all case studies obtained similar results, with both parking spaces and sports and activities getting the lowest scores for both the face-to-face and online questionnaires. As mentioned in Section 5.2.3, public transport is not the preferred mode of transport to travel, especially by locals. However, beach users still opt for their private cars even though they know about the parking problems (Roca et al., 2008). Regarding the low score obtained by sports and activities, this could be for two reasons: either people were not interested in using such services, or else the activities offered at the beaches were either insufficient or unavailable (Lucrezi et al., 2016). Identifying that this is a common problem in all case studies indicates two key areas that need to be addressed in beach management strategies.

Għajn Tuffieħa scored particularly low for its accessibility. Nevertheless, when people were asked this question, they also added that even though accessibility was a problem, they did not want this to be improved as it would attract more people to the beach. This enhances the argument that MPs should be tailored to each beach, given that these attract different users and, by identifying beach users' perceptions, managers would be able to take into consideration such arguments (Zielinski and Botero, 2019). In this case, it would be ideal if the beach is left in its natural state, instead of developing it further to make it more accessible.

Regarding Pretty Bay, apart from parking spaces and activities it also scored low for its water and environment. This is because it is located in a port and it is in front of the Freeport, thus the water is murky and there is more pollution. Nevertheless, this is the largest sandy beach¹⁵ in the south of Malta and so it is still frequented by many people, especially those from the south. These findings are very much in line with the study carried out by Vaz et al., (2009), where users of remote beaches considered the environment to be more important and a bigger influence on their reasons for visiting, whereas those at urban beaches considered car parking and other facilities as more important. Thus, it is important that MPs take into account the typology of

¹⁵ At the time of the study

the beach to understand and plan for the types of people using the beach and why (Zielinski and Botero, 2019).

5.2.8. Perception on beach carrying capacity

As mentioned in Sections 2.5.5.3 and 3.3.6, beach carrying capacity can either be calculated through the actual amount of people a beach can take, or else through the users' perception of crowdedness (Pereira Da Silva, 2002; Giné et al., 2018). In this research, the latter was considered and so through Question seven, respondents were asked to determine whether according to their opinion, the beach they visited had few, average or high numbers of people. This question was important given the fact that the Maltese beaches only amount to circa 1.9% of the Islands (Zammit Pace et al., 2019), and according to Micallef, (2002) the carrying capacity for the Maltese beaches is estimated to be 3m² per person. The question was followed by another one which was left open-ended so that the respondents could further explain their opinion and reasoning for the previous answer. The percentage of the results obtained can be seen in Table 5.2.

Table 5.2: Beach users' perception of the number of people in the four case studies.

Percentages %	Few people		Average		Overcrowded	
	Face-to-face	Online	Face-to-face	Online	Face-to-face	Online
<i>Għadira</i>	2	0	40	35	58	65
<i>Għajn Tuffieħa</i>	7	0	72	57	20	43
<i>Ġnejna</i>	20	3	66	84	14	14
<i>Pretty Bay</i>	14	2	81	80	5	18

From the results observed, more than 55% of the participants in all the case studies, except Għadira, thought that the number of beach users was acceptable. On the contrary, 58% (face-to-face) and 65% (online) of the participants thought that Għadira was overcrowded. In addition, given that some of the surveys were done throughout the week, results could vary. In fact, many of the local users present at the beach during weekdays explained how they would not go to the beach during the

weekend as it would be too overcrowded and there would not be enough space, so they preferred going during the weekdays, when the crowd was less. In fact, one female said *“if you come here during the week, you will always find me and my husband here because that is how we spend our summers since we are pensioners, but don’t tell me to come during the weekend. During the weekend the beach is too busy, so we stay at home watching TV”*. This is in agreement with the study carried out by Pereira Da Silva (2002) in the south-west of Portugal, where it was also concluded that the concept of beach carrying capacity varies from one beach to another, and beach users’ perception might change during the weekends. In this regard, *“the carrying capacity of a beach [...] should oscillate between two tolerable thresholds, allowing the management of the concept in an integrated, flexible and sustained way”* (Pereira Da Silva, 2002, p. 196). As also mentioned by Huamantincó Cisneros, Revollo Sarmiento, Delrieux, Piccolo, and Perillo (2016), analysing *“on site information, video processing [and visualising it using the Geographic Information Systems (GIS), can not only help to estimate beach carrying capacity but] may help identify zones under risk of deterioration and to define suitable places for the development of varied activities. It may also serve as a dashboard for decision and policy making and contribute to coastal management planning as well”* (Huamantincó Cisneros et al., 2016, p. 138).

5.3. Beach user’s familiarity with beach management

The second part of the questionnaire was related to the beach management measures in Malta. It was important to understand whether beach users knew what a BF beach was, given that it is the main tool that is currently being used in Malta. I also wanted to investigate if they knew what beach management was in general and how this impacted, if at all, on their personal preferences and behaviours.

5.3.1. *Participants' knowledge of the Blue Flag Award scheme*

“Beach awards have been said to bridge the gap between recreation and conservation” (Klein and Dodds, 2018, p. 39), an important way of trying to protect beaches while at the same time still allowing people to use and enjoy them. The BF Award is one of the management tools that is being used worldwide from Malta to Central and South America. However, it has been argued that this award has mainly been used to exploit the tourism market, rather than used to manage the beaches (Lucrezi et al., 2015). As already mentioned in Section 3.4, the BF Award is the only management tool that is being used on the Maltese Islands. In 2009, St. George’s Bay achieved the first award in Malta and it continues to be applied to other beaches. In 2019, there were 12 BF beaches around Malta and Gozo, including two of the case studies: Għadira and Għajn Tuffieħa. Seven of these BF beaches on the Maltese Islands are being managed by the MTA. The other beaches are managed by other operators such as hoteliers and the Ministry for Gozo.

Given the number of BF beaches on Malta and the fact that two of the case studies have been receiving this award for a number of years, it was essential to study the relationship between the BF award and the beach users. As a result, Question nine asked the respondents whether they knew what a BF beach was. Those who replied to this question online were provided with a link on BF and had the option to check the definition online and then choose ‘yes, after I checked the link’. The participants were then given the option to define what a BF beach was in a subsequent question. Figure 5.18 shows the results obtained from this question.

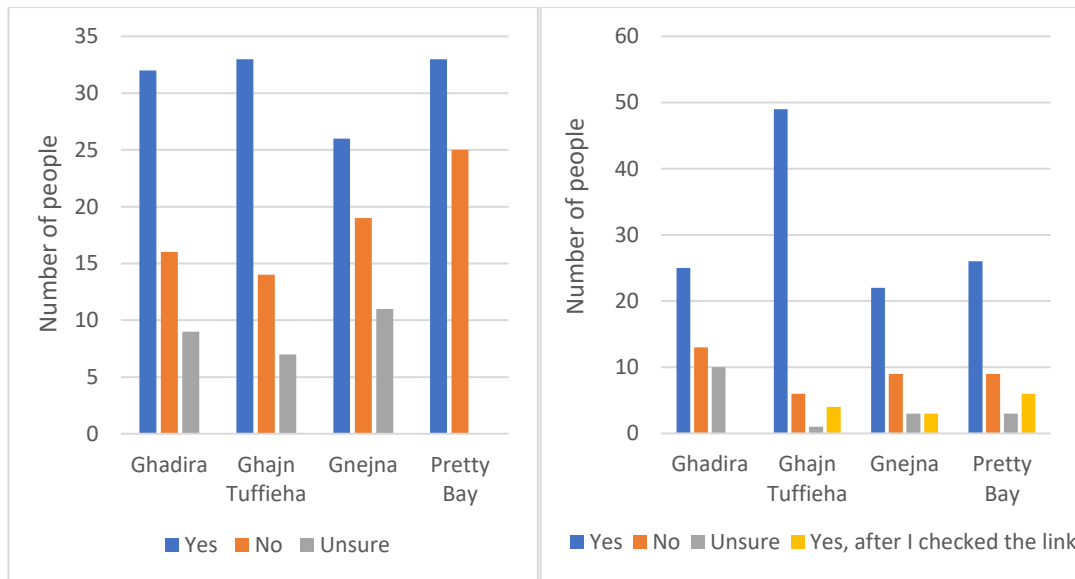


Figure 5.18: Shows how many beach users know what a BF beach is (face-to-face questionnaires on the left and online questionnaires on the right)

Figure 5.18 shows that 55% (face-to-face) and 60% (online) of the beach users who were interviewed knew or thought they knew what a BF beach is. It is quite impressive that those who visited Pretty Bay (which is not a BF) got similar results to Ghajn Tuffieħa and Ghadira (both of which are BF). Given that both Ghadira and Ghajn Tuffieħa are BF beaches, it was presumed that beach users would know better what a BF beach entails. However, from the results obtained, it seems that there is no relationship between the beach being a BF and the reason for going to that particular beach. As outlined by McKenna et al. (2011) and Klein and Dodds (2018), beach users prefer going to a particular beach due to its proximity to their location and its environment, as mentioned in Sections 5.2.1 and 5.2.2, rather than because the beach obtained an award (in this particular case BF). Additionally, it has also been found that beach users do not fully understand the concept of the beach awards such as the BF, strengthening the argument that beach users do not choose a beach because it has a BF (Marin et al., 2009; McKenna et al., 2011; Lucrezi et al., 2015; Klein and Dodds, 2018). Thus, Marin et al. (2009) suggest that more education and public awareness on beach awards are needed to maximise the benefits of their management.

5.3.2. Definition of the BF Award according to participants

For those beach users who said they knew what a BF was, they were given the option to express themselves by giving their definition. These were numerous and varied, so they were coded into themes and then classified as defined in Figures 5.19 and 5.20.

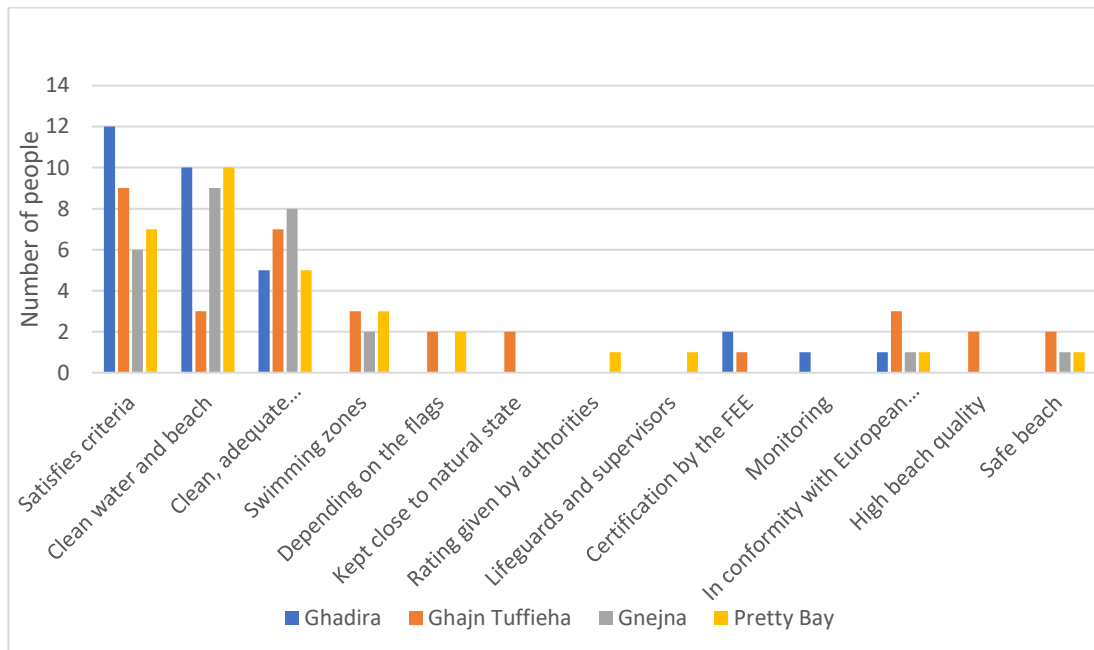


Figure 5.19: BF definition according to beach users (face-to-face questionnaires)

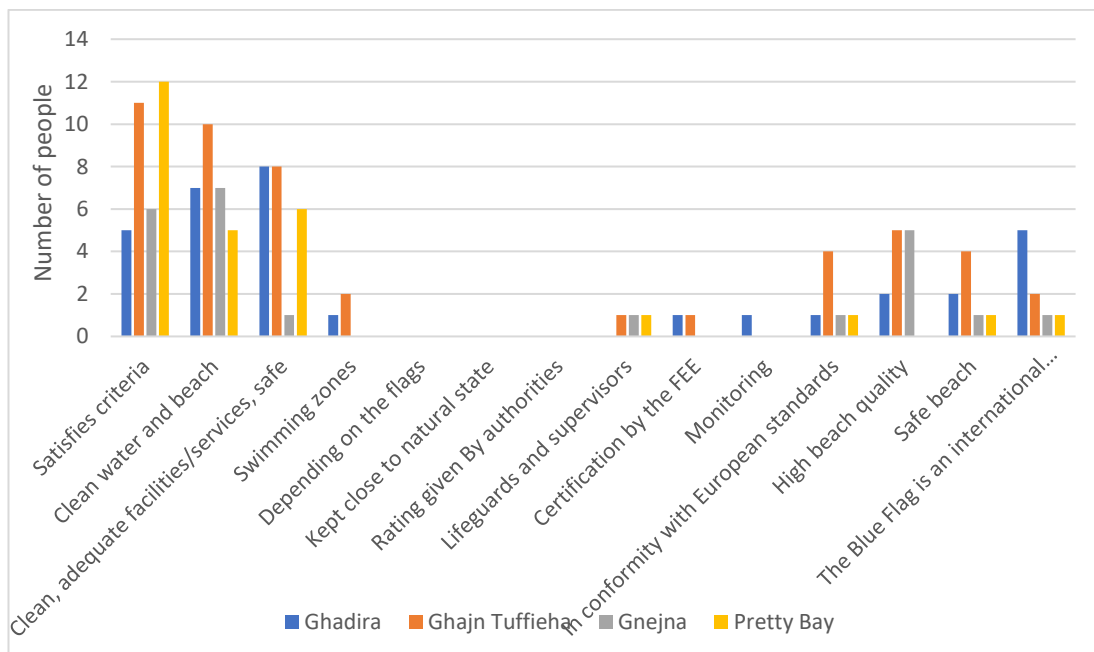


Figure 5.20: BF definition according to beach users (online questionnaires)

No one fully explained what a BF meant, except for some of those who answered the question online and who had had a look at the website that was provided. Such results support the studies that were carried out in Italy by Marin et al. (2009) where out of 81% who said they knew what a BF beach was, only 8% gave a proper definition. In this case, the majority (23% face-to-face and 20% online) thought that a BF beach had to “*satisfy the criteria*” but they did not specify what type of criteria they were referring to. This was followed by having “*clean water and beach*” (21% face-to-face and 18% online) and “*clean, adequate facilities and services*” and “*safe beach*” (17% face-to-face and 14% online). These results were very similar to those obtained by Lucrezi et al. (2015) where, according to the respondents, BF meant having a clean beach (41%), clean water (35%) and lifeguards/safe beach (32%). These results corresponded with both the beach users’ preferences for choosing a beach as well as their perception of beach quality, both in this research (Sections 5.2.2 and 5.2.7) and the study carried out by Lucrezi et al. (2015). Additionally, Lucrezi et al. (2015) also argued that “some attitudes pointed to a contradiction between seeing the BF as beneficial to the beach and tourism, and not selecting beaches based on Blue Flag status” (Lucrezi et al., 2015, p. 222). This shows that beach users were not aware or did not have enough knowledge of this award and more education would be required.

5.3.3. *Beach users’ perception of what is permitted at a Blue Flag beach*

The Code of Conduct for Malta’s beaches states what can be done and what cannot on the beaches (not only on BF beaches). Three of these Code of Conduct paragraphs prohibit “any form of fire or use of barbeque equipment”, allowing people to “erect camps [...]” and also prohibits “animals on sandy beaches” (Malta Tourism Authority, 2020a). Hence, Question 11 was divided into three sub-questions and asked the respondents whether they knew if dogs, barbeques and camping were allowed on the beach since these three activities are the most controversial of all. Given that this question followed the previous one which asked beach users if they knew what a BF was, Figures 5.21 – 5.24 below shows the aggregated results for all the respondents

for the four case scenarios: those who knew what a BF was, those who did not, those who were unsure and those who checked the link online.

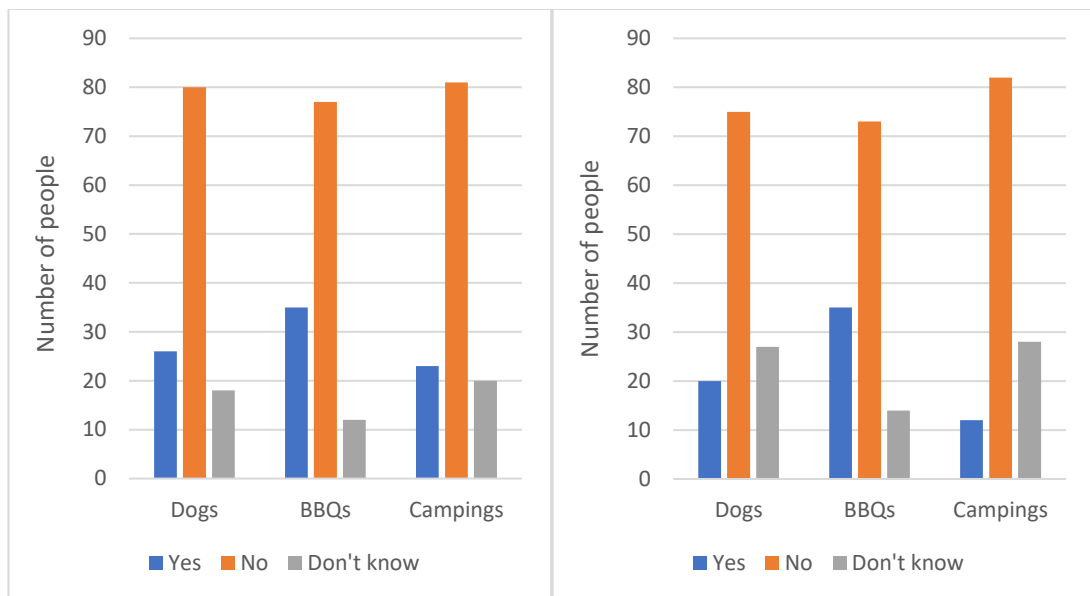


Figure 5.21: Those who thought they knew what a BF beach was – all case studies (face-to-face on left, online on right)

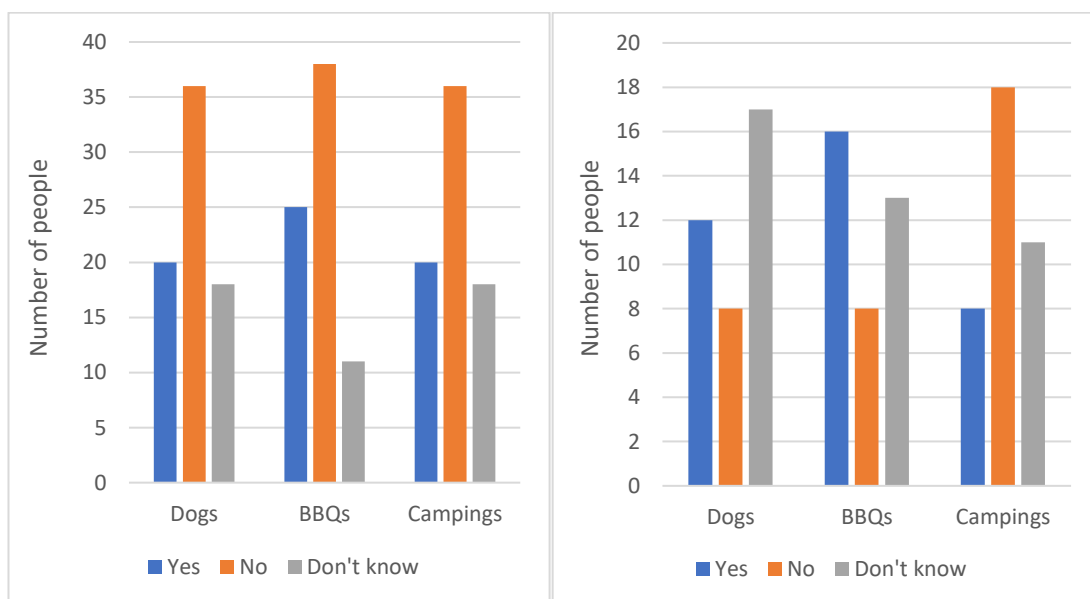


Figure 5.22: Those who did not know what a Blue Flag beach was– all case studies (face-to-face on left, online on right)

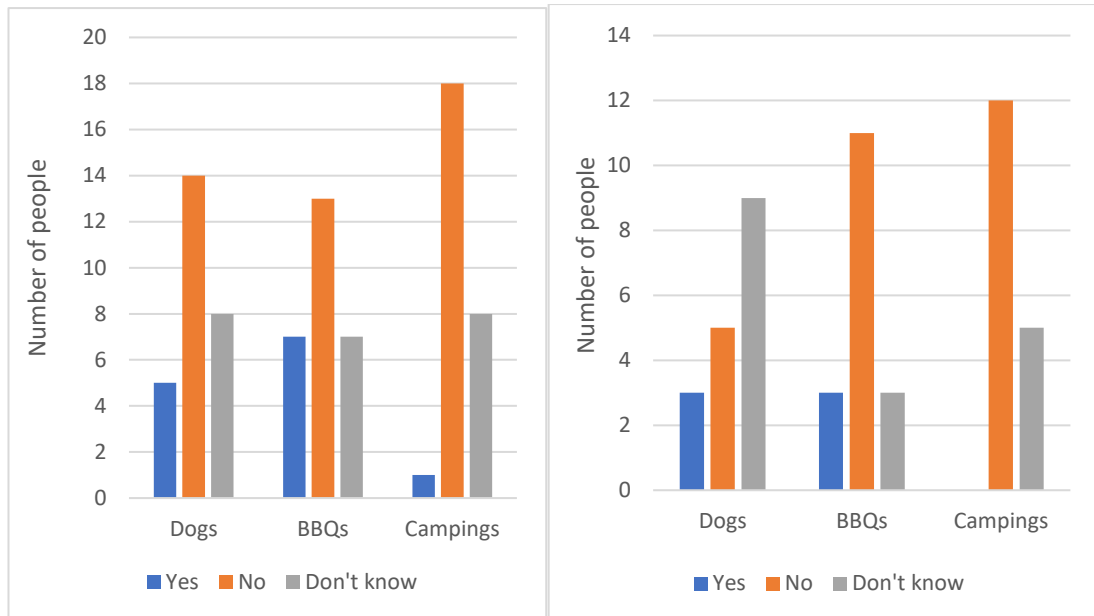


Figure 5.23: Those who said they were unsure what a BF beach was – all case studies (face-to-face on left, online on right)

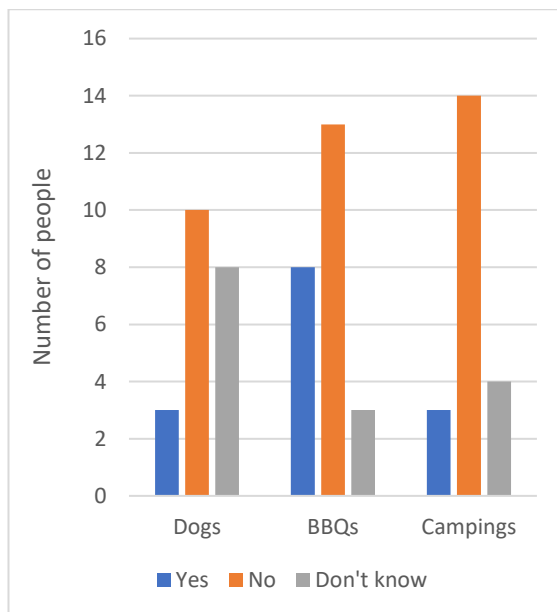


Figure 5.24: Those who checked the link – all case studies (online only)

All the graphs (Figures 5.21 – 5.24) show that there are diverse perceptions of what activities are allowed on beaches. I presumed that those who answered yes to the previous question (they knew what a BF beach was) would know that dogs, barbeques and camping were prohibited on beaches. Nevertheless, there were still a considerable number of people (36% face-to-face and 37% online) who answered 'yes' or 'don't know', which contradicts their initial answer. It was expected that those who replied online would know that such activities were prohibited, given that

they had the possibility of looking it up through the link provided. The fact that many didn't, shows either a lack of interest in looking for the information, or that their time was restricted. This is similar to the research in Ontario, undertaken by Klein and Dodds (2018), where it was found that although those beaches that were awarded the BF were seen on the news, the public did not really understand the concept.

The results from the above graphs are quite surprising given that all the case studies have signs showing what can and cannot be done on the beach (Figures 5.25 - 5.28). This could mean two possibilities: either they did not read the whole instructions or information, or else the information provided was not clear/legible. Thus, a more interactive or one-to-one education would be required (Lucrezi et al., 2015) (further discussed in Sections 5.3.5 and 5.4.4).



Figure 5.25: Beach notice board at Għajn Tuffieħa bay (BF beach) (Source: Author, 2019)

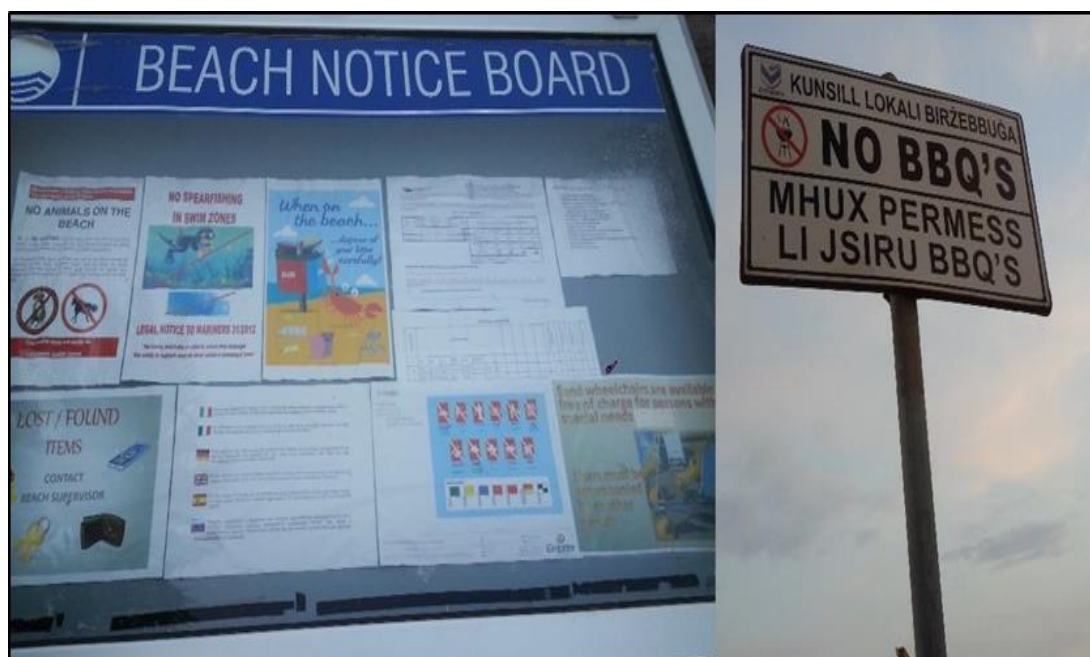


Figure 5.26: Beach notice board and other notices in Pretty Bay (Non-BF beach)
(Source: Author, 2019)



Figure 5.27: Code of conduct on one of the entrances at Ghadira beach (BF beach)
(Source: Author, 2019)



Figure 5.28: Code of conduct at Ġnejna beach (Non-BF beach) (Source: Author, 2019)

It is to be noted that even though barbeques are not allowed on beaches, there are some cases where this is acceptable as long as the beach user has a permit or does not exceed a certain number of people. This is a bit confusing as to 1) which beaches require permits, 2) whom one should contact for said permit (although it is implied that the LC is responsible), 3) the number of persons allowed before one must apply for a permit (some beaches need a permit for ten persons or more, others for 15 or more) 4) how much in advance should one apply for a permit, and 5) how much a permit costs.

During the face-to-face questionnaires there were beach users who revealed that, due to the complexity in applying for a permit, they opt not to follow the instructions. When the researcher asked them if they were afraid of receiving a fine if found without a permit, they laughed and said that *“even though there are police patrols, they do not enforce the law on the beach”*. In fact, during the face-to-face questionnaires, there were instances when people admitted that they have barbeques and/or bring their dogs even though they know that this is not allowed. One the respondents justified herself that *“the dog is very small and does not disturb anyone”*. Most of the beach users also expressed their frustration that due to other people’s negligence, almost all sandy beaches were banned from having barbeques.

Hence, beach users proposed having areas dedicated to these types of activities and to also have a warden penalising those who leave litter or damage anything. They proposed to have more enforcement and harsher fines for those who do not abide by the regulations instead of banning the activity for everyone. Such findings are similar to those carried out in South Africa by Lucrezi et al., (2015), where it was observed that even though there were restrictions on what one can do, such activities still took place as there was a lack of management and enforcement. A solution to this was to employ beach wardens “with full legal power to enforce regulations and local by-laws” (Lucrezi et al., 2015, p. 224). Nonetheless, this research recommends that if beach wardens are to be employed, they should be available 24 hours 7 days a week. Currently in Malta the office hours for beach wardens are from 10 am to 6 pm, leaving all the evening open to illegalities.

5.3.4. *What is beach management?*

The following question (Question 13) asked beach users to identify what in their opinion beach management involves. This question listed 16 options, of which beach users had to choose the first three most important aspects. From this ranking, a total score¹⁶ was obtained. Figures 5.29 and 5.30 show the total scores for all the case studies together, whereas Tables 5.3 and 5.4 show the three most important aspects of beach management according to the beach users.

¹⁶ For each variable a score was obtained by multiplying the first most important choice by the value of 3, the second by 2 and the third most important was multiplied by 1. The scores obtained for each rank were then summed up to obtain the final score.

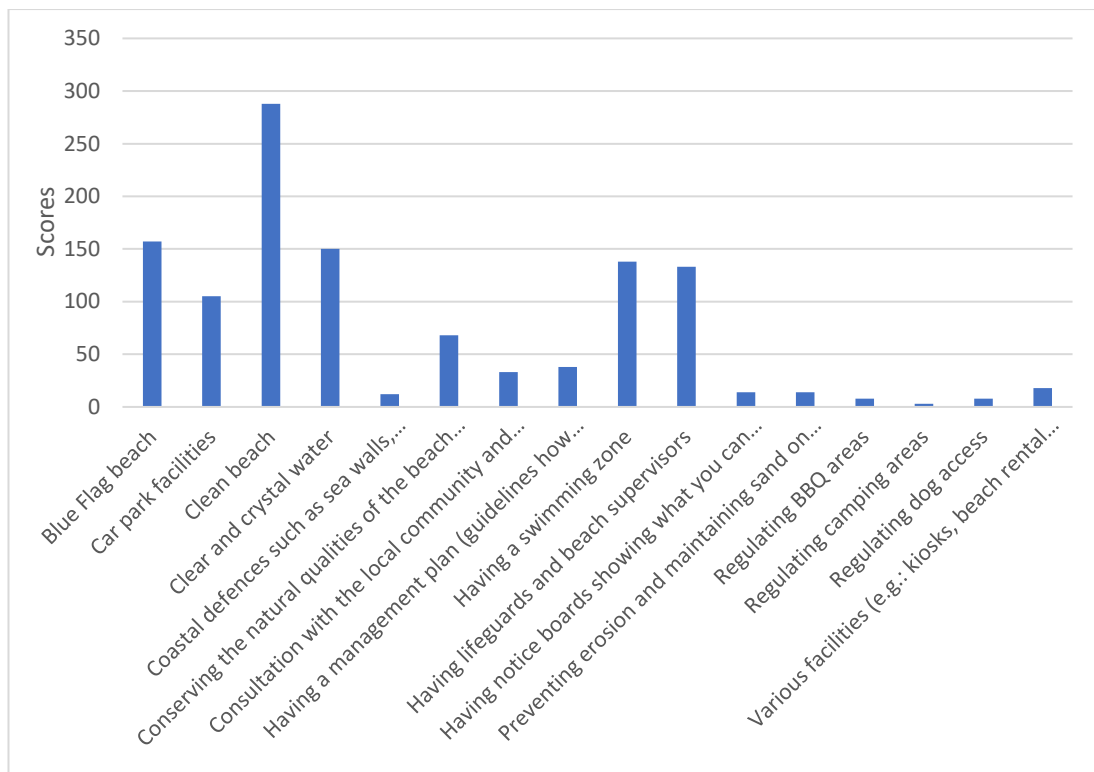


Figure 5.29: Beach management according to beach users (face-to-face questionnaires)

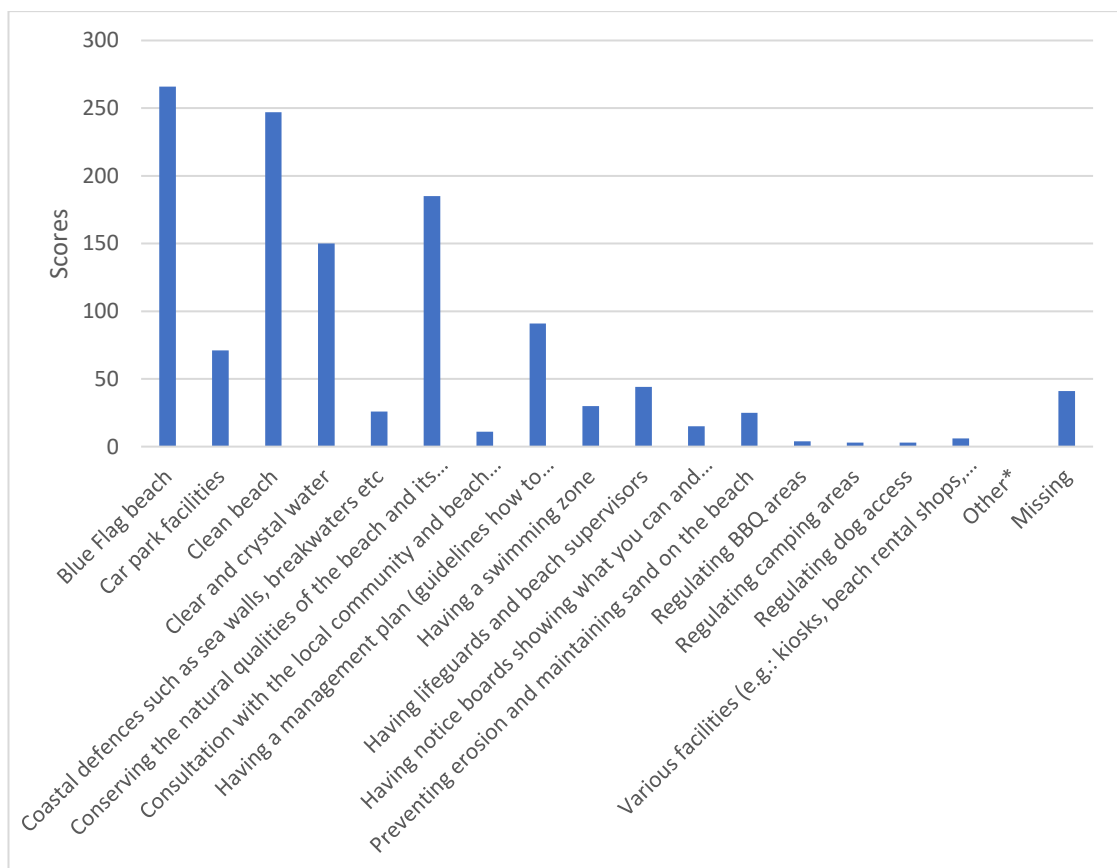


Figure 5.30: Beach management according to beach users (online questionnaires)

Table 5.3: The three most important aspects of beach management according to beach users (face-to-face questionnaires)

<i>Variables</i>	<i>Score</i>	<i>Percentage %</i>	<i>Rank</i>
<i>Clean beach</i>	288	21	1
<i>Blue Flag beach</i>	157	12	2
<i>Clear and crystal water</i>	150	11	3

Table 5.4: The three most important aspects of beach management according to beach users (online questionnaires)

<i>Variables</i>	<i>Score</i>	<i>Percentage %</i>	<i>Rank</i>
<i>Blue Flag beach</i>	266	22	1
<i>Clean beach</i>	247	20	2
<i>Conserving the natural qualities of the beach and its environment</i>	185	15	3

From Figures 5.29 and 5.30 and Tables 5.3 and 5.4, it was evident that for the respondents, beach management meant having a clean beach (21% face-to-face, 20% online), a BF beach (12% face-to-face, 22% online) and clear and crystal water (11%) for those who answered face-to-face; whereas for those who replied online (15%), it was to conserve the natural qualities of the beach and its environment. This is most probably because these are the elements that have a direct impact in a short amount of time on the users, while the others are something that take time for people to see their benefits. These results go against the proper definition of beach management, which is to protect the coastal environment, improve recreational activities, improve stakeholders' and users' perception, as well as include the socio-economic environment in an integrated approach (Bird, 1996; James, 2000; Williams and Micallef, 2009; Ariza et al., 2014). Conversely, both the beach users who replied face-to-face, and those who replied online, did not think that regulating certain activities such as barbeques, dogs and camping was relevant to managing the beach.

For some of the beach users, to have a BF beach meant having effective beach management. However, this contradicts the results obtained in Section 5.2.2, which highlighted that beach users did not choose a beach because it was awarded the BF, even though a BF was seen important for the management of beaches (Section 5.3.4) (Lucrezi et al., 2015).

5.3.5. *Who is responsible for it?*

Of the four case studies chosen in this research, three of them were being managed at the time of the research. These were Għadira Bay and Pretty Bay, which were being managed by the MTA, and Għajn Tuffieħa Bay which was being managed by the GAIA Foundation up until the summer of 2018. However, due to financial constraints, this beach was now being managed by the MTA as well. Regarding Ġnejna beach, this was under the jurisdiction of the Mġarr LC and as such its management fell within the council's remit.

To recognise what people understood about beach management, they were asked to identify who they thought managed the beach they were visiting, especially if this was a BF. The results for each case study are illustrated in Figures 5.31 and 5.32 below.

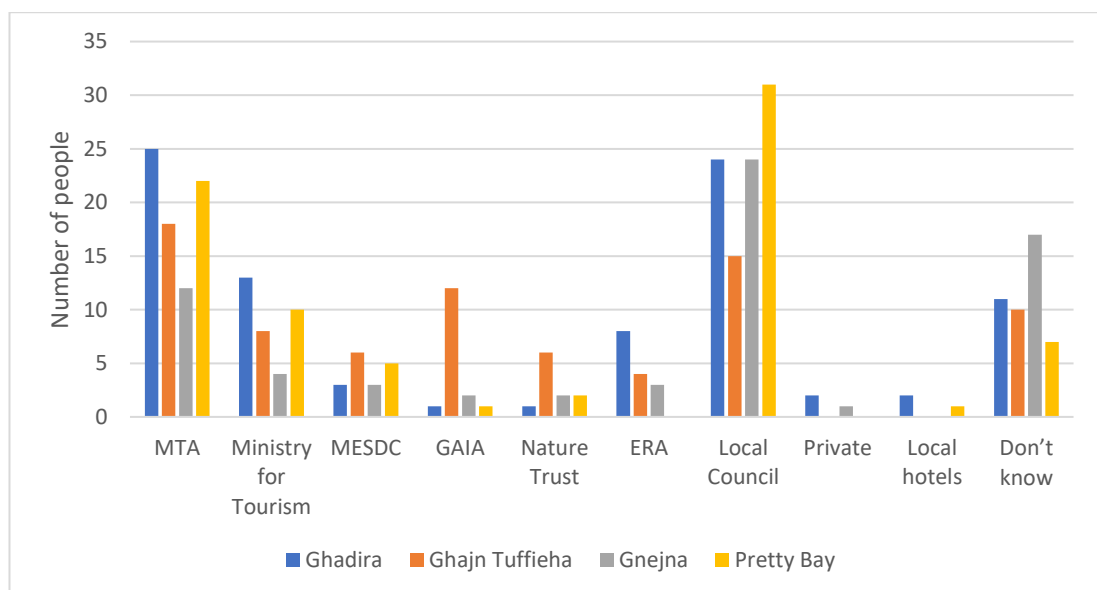


Figure 5.31: The responsible authority for each case study according to the beach users' perception (face-to-face questionnaires)

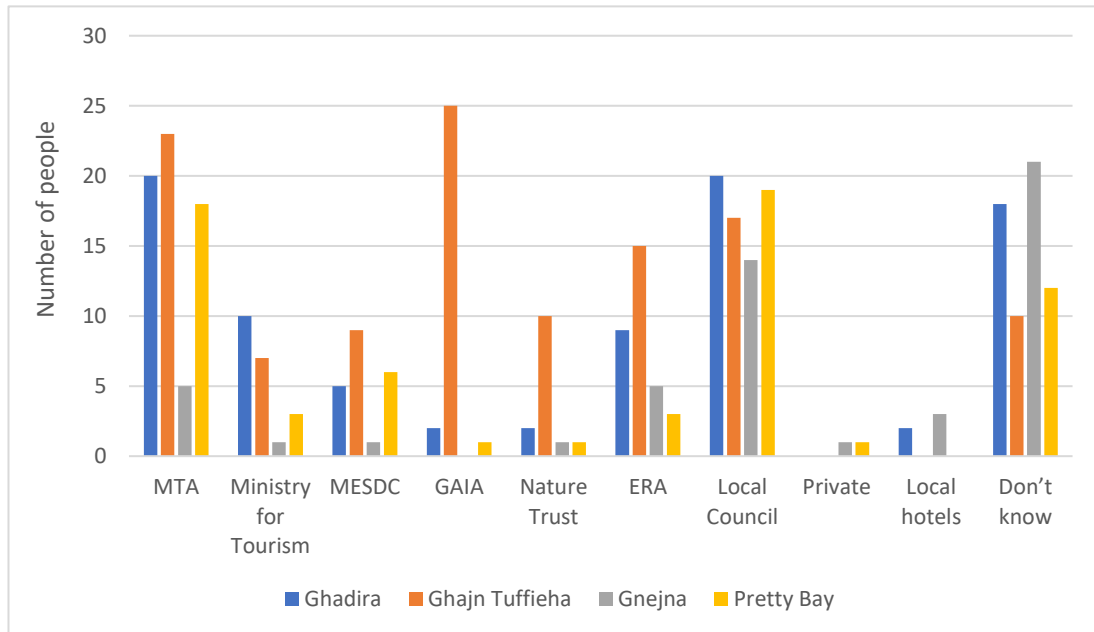


Figure 5.32: The responsible authority for each case study according to the beach users' perception (online questionnaires)

As already mentioned in Section 3.3.1, beach management on the Maltese Islands is fragmented amongst different authorities who are responsible for different parts of the beach, such as waste management, permits, cleaning and infrastructure. For Ghadira Bay, which is currently being managed by the MTA, most of the beach users that were interviewed on site chose the MTA ($n^{17}=25$) and the LC ($n=24$) as the responsible bodies for beach management in Ghadira. The same authorities, the MTA ($n=20$) and the LC ($n=20$), were also chosen by those who did the online questionnaires. Given that Ghadira is a BF, there are many signs and boards at each entrance to the beach explaining different things including who is managing it. Thus, it was expected that more beach users who did the questionnaire on site would know who was responsible for Ghadira Bay (at least during summer). Nonetheless, as explained in Section 5.3.1, the results showed otherwise, and it seems that the information being provided is either not clear or it is being ignored.

With regard to the LC, even though it should be responsible for the beach that falls under its jurisdiction and is responsible for passing by-laws (Williams and Micallef,

¹⁷ Number of people

2009; Government of Malta, 2020a) when the Mellieħa LC was contacted for a possible stakeholder interview, they replied that they were not involved in the management of the actual beach (as this is being managed by the MTA) but they are responsible for the pavements and lights adjacent to the beach. However, during an interview that was held with the MTA, it was mentioned that the latter is only responsible for the beach during the bathing season (Chapter Six). Hence, during the winter, this beach is not being managed by anyone, but it is maintained by the CMD, which empties the bins, removes the beach infrastructure for the winter (such as beach ladders, and walkways) and keeps the area clean (Chapter Six).

With regard to Ġħajn Tuffieħa, most participants that replied on site chose the MTA (n=18) and the LC (n=15), whereas those that replied online chose the GAIA Foundation (n=25) followed by the MTA (n=23) as the responsible authorities in managing this beach. Until 2017, the beach was being managed by the GAIA Foundation with financial help from the MTA to run the BF. However, as of 2018, due to financial constraints, the GAIA Foundation was only responsible for the BF environmental awareness and educational activities, the rest fell under the responsibility of the MTA (GAIA Foundation representative, personal communication, May 22, 2018). Given that the questionnaires were held during the summer of 2016 and 2017, and at the entrance of the beach there were various boards explaining who the GAIA Foundation is and what their responsibilities were, it was expected that at least those who did the questionnaire on site would better know who is managing the beach. Nevertheless, as in Ġħadira Bay, this was not the case. This further confirms as discussed earlier, that boards are not effective in attracting the beach users' attention, so other methods such as interactive experiences are required as these would provide one-to-one communication (Lucrezi et al., 2015).

Out of the four case studies, Ġnejna was the only beach that was not being managed by the MTA, but supposedly under the responsibility of the Mġarr LC. The council was also invited to participate in the stakeholder interview to see to what extent it is involved in the management, but they never got back with a reply, most probably

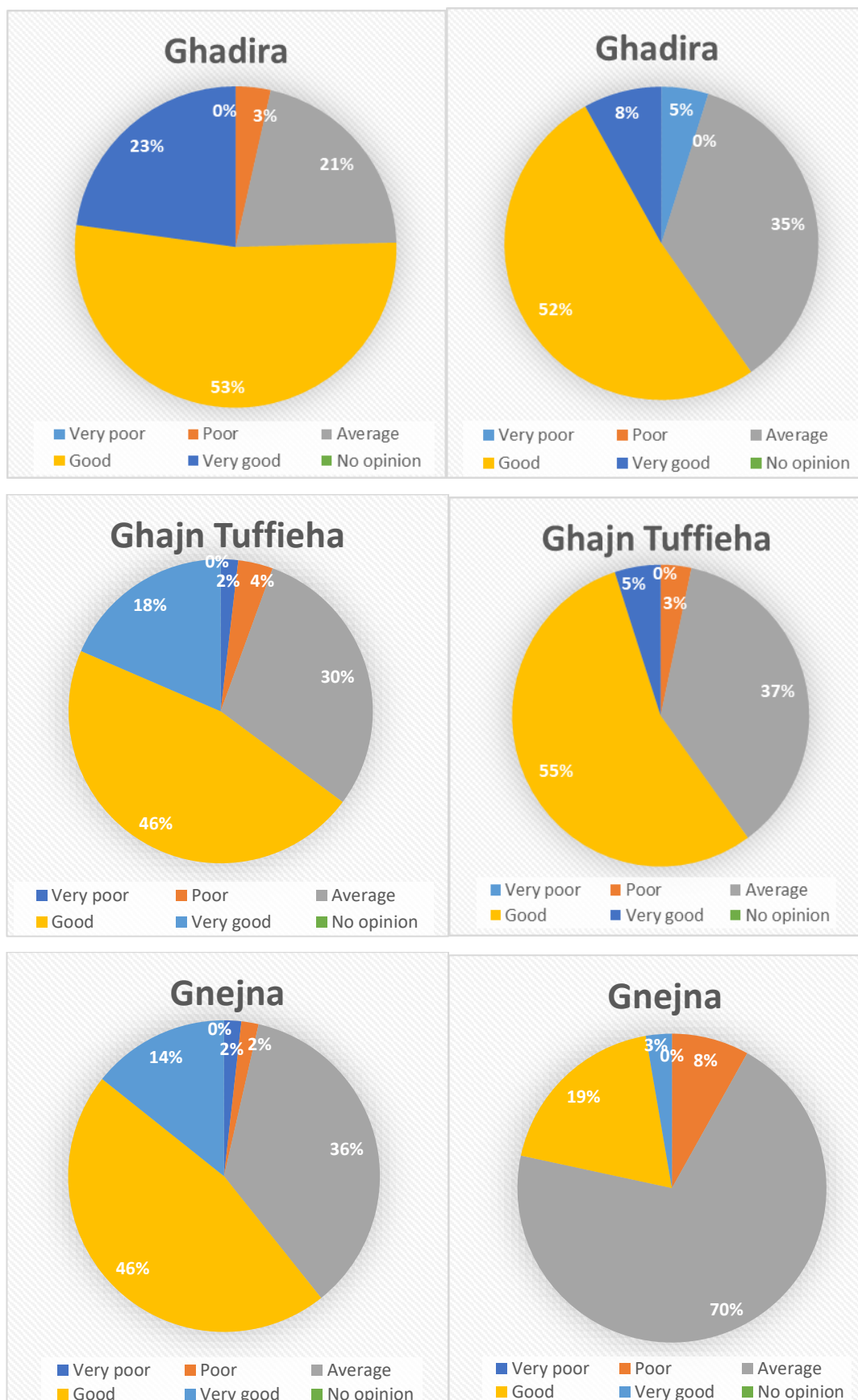
because they do not think that beach management falls under their remit. This reasoning was provided by the Għadira LC who also did not participate in the interviews (more reflections in Chapter Six). Regardless of this, Figures 5.31 and 5.32, show that some of the beach users who replied on site *were* aware of who is responsible, as the LC got a score of 24 out of 68, followed by 'don't know' which scored 17 out of 68, and 'the MTA', which was selected by 12 out of 68 respondents. Those who replied online, however, did not know who was responsible for this beach (21 out of 52 respondents), followed by identifying it as the LC (14 out of 52 respondents).

With regard to Pretty Bay, even though this beach can never achieve the BF Award as it does not meet all the required criteria, it is still being managed by the MTA. This is due to the fact that at the time of the research, it was the only large sandy beach in the south of Malta and so the MTA wanted to provide a safe environment in this part of Malta as well (P. Dingli, personal communication, April 13, 2018). Many of the beach users thought the LC managed the beach (31 out of 79 for the face-to-face and 19 out of 64 for the online questionnaires), followed by the MTA (22 out of 79 for the face-to-face and 18 out of 64 for the online questionnaires). As in the case of Għadira, when the LC was interviewed as part of the stakeholders group, the Mayor acknowledged that they collaborated with the MTA and the CMD, but said that the MTA was the sole authority responsible for the beach, whereas the LC managed the area behind the beach and other infrastructure which is adjacent to the beach.

5.3.6. *Rating the management of the beach*

Understanding beach users' perceptions and attitudes on how beaches are being managed is important for managers to reduce conflicts and for "making the planning process more effective and legitimate" (Marin et al., 2009, p. 268). The participants were therefore asked to rate the management of the beach they were visiting by indicating one of the five options (from very poor to very good). The participants then

had the opportunity to explain their answer. Figure 5.33 shows the different ratings of beach management for each case study.



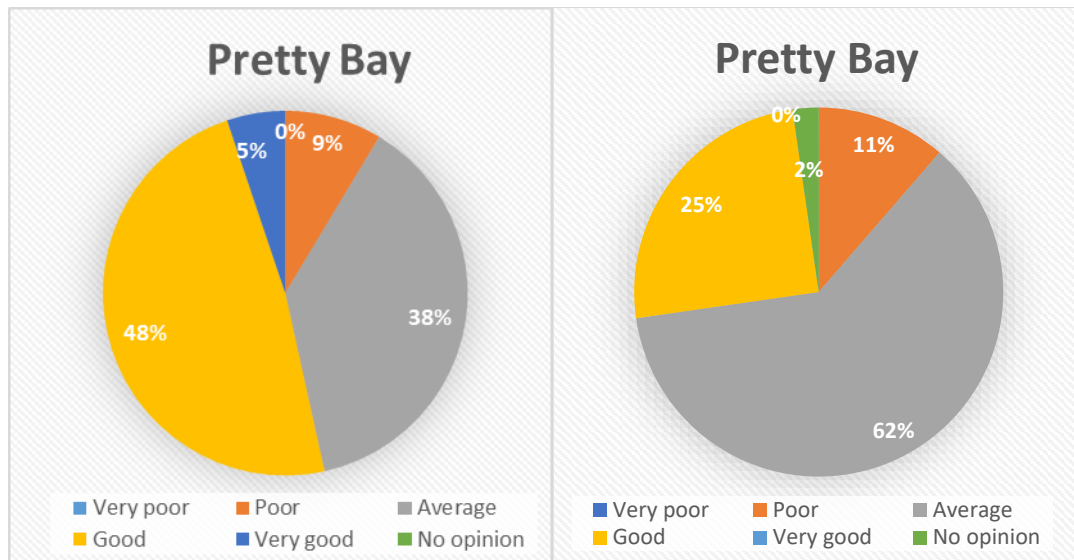


Figure 5.33: Beach management rating in the case studies (face-to-face on left, online on right).

When rating the management, 76% (face-to-face) and 60% (online) of beach users in Għadira and 64% (face-to-face) and 60% (online) of beach users in Għajn Tuffieħa held a good or very good opinion of how the beach was being managed. This can be attributed to the fact that both the beaches are clean and have clear waters, they have lifeguards and supervisors, thus are considered safe, and they also have facilities such as lavatories and showers. Additionally, both beaches are BF and managed by the MTA, thus they must adhere to specific criteria and maintain a certain standard.

It has been argued by researchers (Roca and Villares, 2008; Lucrezi et al., 2016) that beach users' satisfaction varies from beach to beach depending on its physical aspects, its facilities, infrastructure and services as well as its environment. This was reflected in the results obtained for Ġnejna beach, where 60% of those interviewed face-to-face, but only 22% online, rated the management of the beach as either 'good' or 'very good'. The difference in results could be due to the fact that those who answered the question on the beach were happier with the physical aspect as well as the environment of the beach, whereas those who answered it online could have been referring to the lack of facilities, cleanliness and management. Similarly, from Pretty Bay, 53% face-to-face and 25% online participants chose 'good' or 'very good' ratings. However, with regard to Pretty Bay, apart from the lack of facilities this

could also be attributed to the environment, given its location. Such a difference between the face-to-face and online questionnaires could be attributed to social desirability where, indirectly, participants reply according to what they think the interviewer wants to hear, or else because online users tend to be more pessimistic (Kralj et al., 2016).

Shared comments about the management of beaches were that they became dirty in the afternoon and evening, including the lavatories. Beach users commented that the bins were always full in the evening, which left the beach dirty. This could be either because people have more free time to visit the beach after work, or that the bins fill up during the day and need to be emptied more frequently. It was interesting to note that the three of the four case studies which are being managed by the MTA got the same results as Ġnejna, which is not being managed. An explanation for this is that the beaches are only managed until 6 pm, after which there is no one responsible and enforcement is lacking.

5.4. Beach users' perception on how to improve beaches

While Section 5.3 was about beach user's perception (understanding) of current beach management, this section focuses on what the participants thought could be done to improve the management of beaches. It outlines the perceived issues that beaches are facing, how these can be improved, and whether people believed there is a place for the public to participate in management decisions.

5.4.1. *Willingness to pay a fee for an improved beach concept*

Management of beaches is not a free service. There are significant costs involved in the process (Rodella et al., 2019). The beach users were therefore asked to indicate whether they would be willing to pay a fee if it meant having an improved or maintained beach. Respondents had three options to choose from (yes, no, don't know). Initially, in the pilot study, the researcher also requested the respondents to specify the amount he or she would be willing to pay, if they had the option, and how

they were willing to pay (e.g.: tourist tax, per each entrance to the beach, etc). However, given that the pilot questionnaire was quite long, people were not willing to fill in these two particular questions. The researcher therefore decided to omit them during the main questionnaire. The results for each case study are illustrated in Figure 5.34.

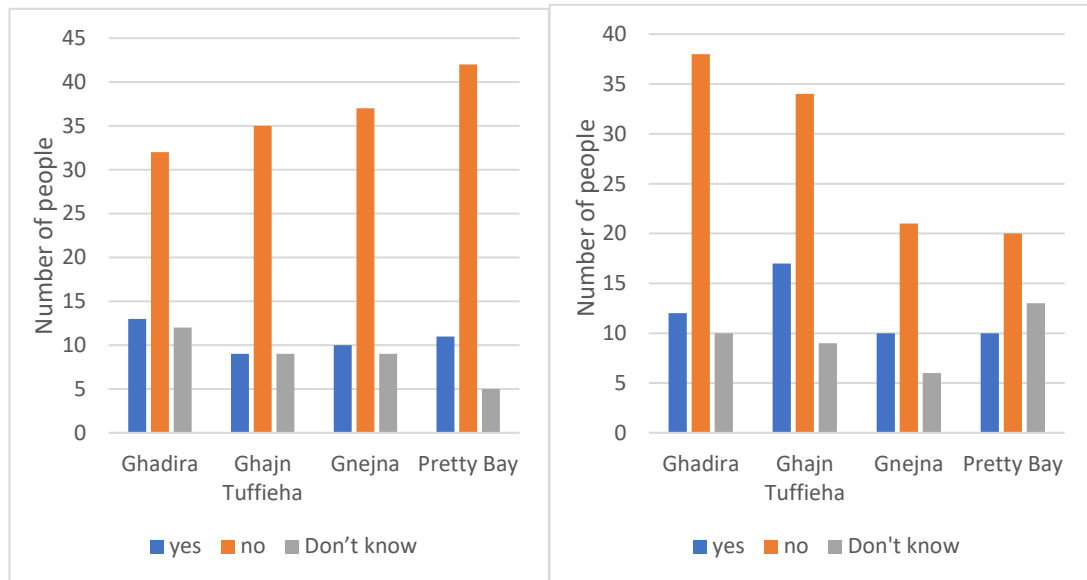


Figure 5.34: Shows whether beach users are willing to pay a fee for a better-maintained beach (face-to-face on left and online on right)

Between 45% (face-to-face) and 75% (online) of the beach users for all case studies were *not* willing to pay a fee in order to have access to the beach, even if that meant having an improved or maintained beach. Such a discrepancy in the results could be attributed to social desirability, which as explained in Sections 5.2.2 and 5.3.6, means online respondents tend to be more truthful in their answers as opposed to those who did it face-to-face, who tend to want to please the interviewer (Szolnoki and Hoffmann, 2013; Kralj et al., 2016). Some of the justifications by the beach users for not wanting to pay for beach management were that they already pay taxes and, since the beach was public, they saw no point in having to pay extra and the maintenance of the beach should be the responsibility of the government. These results are very similar to the studies that were carried out by Blakemore et al. (2002, p. 37) in Malta, whereby their results showed that beach users in Malta were not very willing to pay. This could be attributed to the fact that beaches were rated as

excellent, thus it would “reduce their willingness to pay since their excellent rating is partially dependent on the free access status of the beach”. In addition, other studies carried out by Lozoya et al. (2014) in Costa Brava and by Alves et al. (2015) in Spain also showed that many of their respondents (c.70 % and 87%) were not willing to pay since they already pay taxes. Alves et al. (2015) also argued that “beachgoers may not have a clear picture of the real cost of coastal maintenance and management [hence they] are not willing to pay for it” (Alves et al., 2015, p. 276).

5.4.2. Beach users’ opinions on issues being faced by Maltese beaches

By examining beach users’ perceptions, it was also possible to identify and obtain information on issues that were bothering the users, such as litter, polluted seas and beach erosion. Although beach users’ perceptions might not focus on the most important issues to tackle, such information is important to beach managers as then they can prioritise issues and tackle them accordingly (Marin et al., 2009). Beach users were therefore asked to highlight the problems that according to their opinion were being faced by Malta’s beaches. They had ten options to choose from and were asked to pick the three most important issues. Each variable was then ranked. Figures 5.35 and 5.36 below show the issues from the respondents’ perspective.

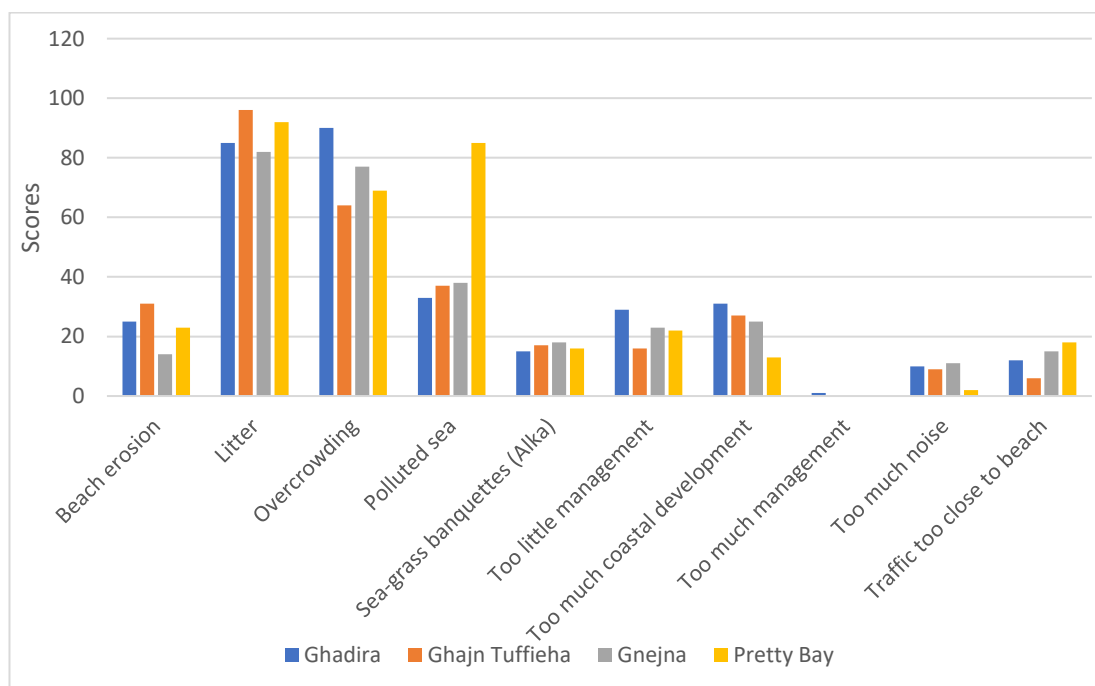


Figure 5.35: Main issues according to beach users (face-to-face questionnaires)

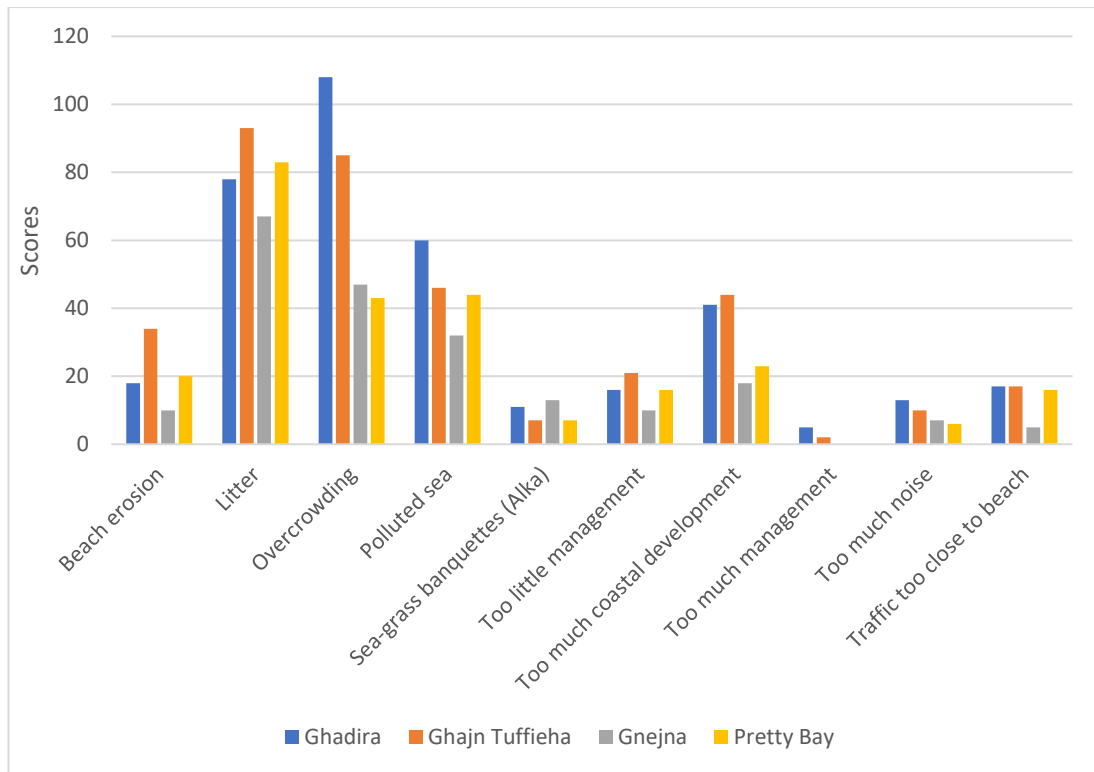


Figure 5.36: Main issues according to beach users (online questionnaires)

In both cases, it seems that those who replied face-to-face and online agree about the main issues being litter (26% of the scores for both), overcrowding (22% of the scores for the face-to-face and 23% of the scores for the online) and polluted sea (14% face-to-face and 15% online) in all case studies. With regard to Ghadira beach, the main issue was overcrowding, which confirms the perception of beach users in Section 5.2.8. Perception can be very subjective; however, one of the reasons why participants felt that the beach was overcrowded was the fact that on this beach kiosks which rent umbrellas and deckchairs can set them up in a defined area from early morning until they close. Up until 2018, there were seven kiosks which rented this furniture and each one of them had an area of 1, 334 m² (Arena, 2019). This meant that if the entire Ghadira beach had an area of circa 25, 000 m², 40% of this area was occupied by deckchairs and umbrellas. Every year, beach users used to complain about this as the other beaches (such as Pretty Bay) only put up an umbrella and a deckchair if this was requested, thus beach users had the opportunity to bring their own umbrellas and put them where they wanted. In the summer of 2019, the Minister for Tourism reached an agreement with the kiosks owners to reduce their area by 334 m², thus giving circa ten percent of the area back to the public (Arena,

2019). However, the perception still remains as people are still complaining that they do not have enough space for them to put up their own umbrellas. This is seen from the numerous comments left on different Facebook pages.

Conversely, litter was the main issue in Għajn Tuffieħa beach, Ġnejna beach and Pretty Bay. However, even on Għadira beach, litter was the second issue. In fact, a couple of beach users, as well as some of the stakeholders, said that in the morning beaches would be clean, but become less clean during the afternoon and by the evening there would be a lot of rubbish on the beach and the bins would be full. Additionally, all the beaches in Malta tend to get a considerable amount of seagrass deposited on the bays, especially after a storm (Figure 5.37). Even though this is important to hold the sand in place during storms in winter, seagrass is perceived as something dirty by the beach users. Thus, it could also be that the remaining seagrass on the beach was also categorised as litter. Additionally, both Għajn Tuffieħa and Ġnejna tend to get a lot of plastic litter washing in from the sea, especially when there is a north-westerly wind. Pretty Bay also scored highly for its polluted sea. This is due to the beach being located in a port and next to the Freeport, with small anchored vessels which make the water look murky and dirty. This has also been an issue in places like Italy. Marin et al. (2009) for example found that in several parts of Italy, dirty sea and litter were the main issues, followed by overcrowding.



Figure 5.37: Ghadira Bay covered in seagrass after a heavy thunderstorm (Source: Author, 2019)

5.4.3. *Beach users' opinions on how a beach can be improved*

Public participation in management decisions is essential as it can “improve the quality and durability of decisions, increase the rate of adoption and diffusion of new decisions [...] as well as enhance the capacity to meet local need and priorities” (Chen, Pearson, Wang, and Ma, 2017, p. 19). Thus, the need to understand beach users’ perception on what to change or arrange to improve the management of Malta’s beaches was important. The answers were divided into themes highlighting the main concerns that the public felt should be acted on (Figures 5.38 and 5.39).

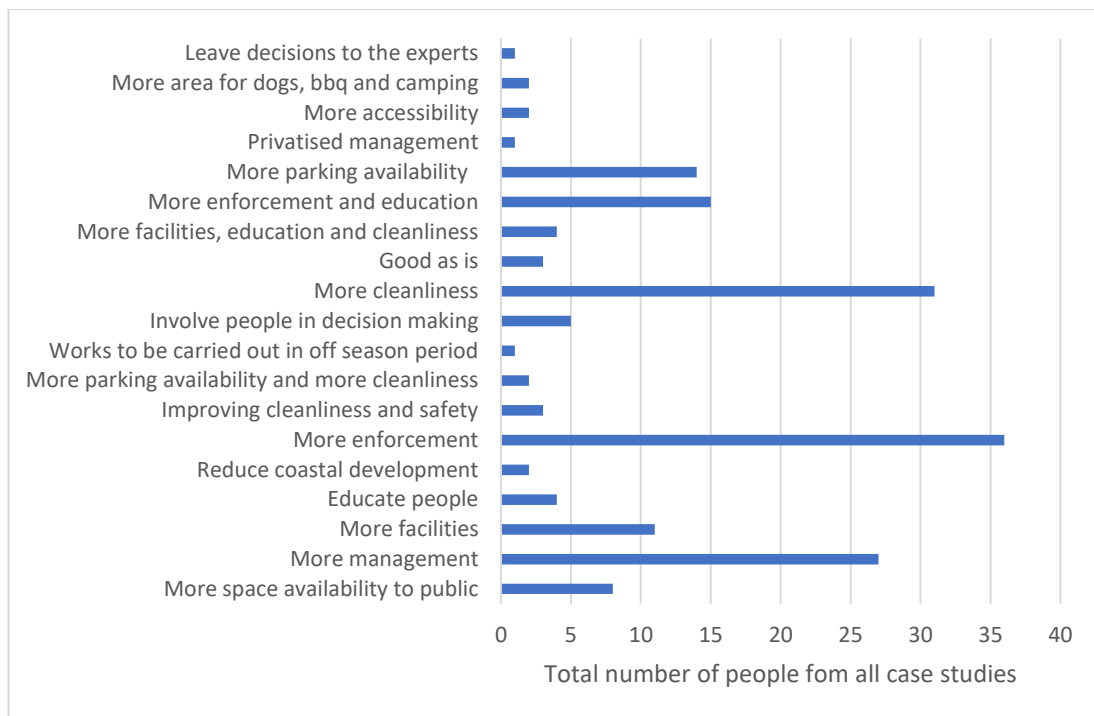


Figure 5.38: Beach user's opinion of how they think beach management should be improved (face-to-face questionnaires)

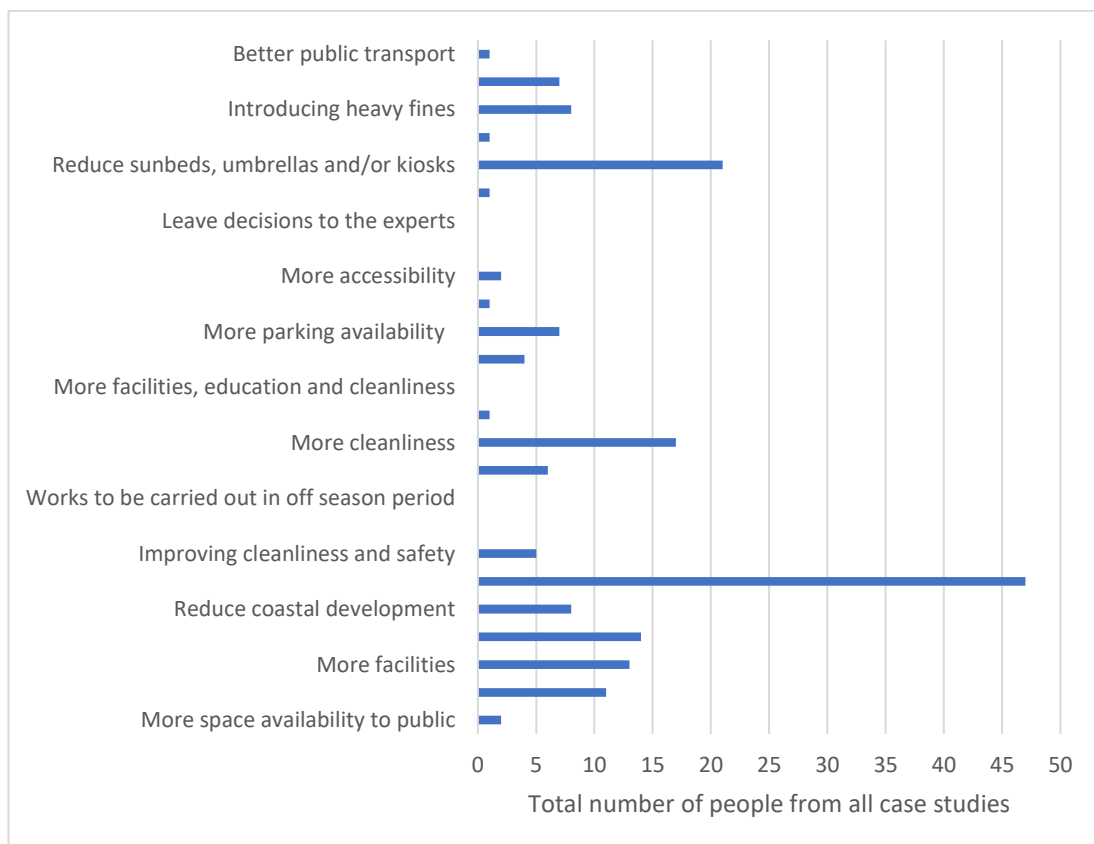


Figure 5.39: Beach user's opinion of how they think beach management should be improved (online questionnaires)

Many people opted not to answer this question (24% face-to-face and 12% online). This could be attributed to the fact that this question was open-ended, and almost at the end of the questionnaire, so that participants did not want to spend time thinking about what to write. When comparing both types of questionnaires, beach users both agreed that there was a need for more enforcement of regulations (23% face-to-face, and 25% online of the total sample). This agrees with a previous study undertaken in south-eastern Australia by Maguire et al. (2011), where circa 80% of the respondents wanted to see more enforcement as well as better zoning. Additionally, a study undertaken by Lucrezi et al. (2016) in South Africa showed that beach users wanted more enforcement and saw this as an opportunity to create more jobs.

Those who answered the questionnaires on the beach wanted more enforcement of the rules/regulations (23%), better cleanliness of the beach (15%), more effective management (12%), more facilities (7%) such as lavatories and showers and greater parking availability (6%). It is interesting to note that those who answered online suggested a reduction in sunbeds and umbrellas and/or kiosks (10%) would be an improvement. This suggestion was only mentioned by 3% of those who answered it on the beach, instead they focused on more enforcement. This could be due to the fact that those who filled in the questionnaire on the beach were renting deckchairs and umbrellas and were satisfied with the service given. Nevertheless, they still wanted the public to have more space available on the beach, so indirectly they were still affected. Other suggestions were more enforcement of regulations (25%), more cleanliness (8%), to educate people (7%) especially about litter, signs and BF criteria, and more facilities (6%) such as lavatory facilities.

5.4.4. Keeping the beach users informed

Informing the public and educating them about the subject can help to improve the effectiveness of public participation (Marzuki, 2015). In Question 20, the beach users were asked whether they would want to be kept informed of any changes in management decisions if given the opportunity. Results are illustrated in Figure 5.40.

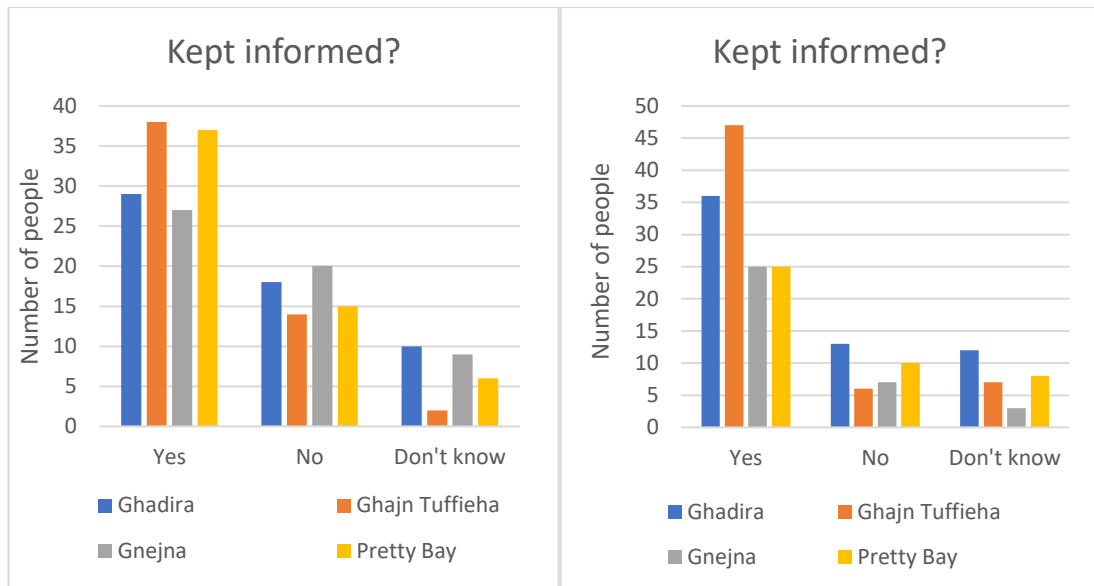


Figure 5.40: shows whether beach users would like to be kept informed on management decisions (face-to-face questionnaires on left, online questionnaires on right)

In both cases, the majority (58% and 66% respectively) of beach users wanted to be kept informed, especially those who were replying for Ghajn Tuffieha beach. This could be since this beach is one of the beaches on Malta which is richest in biodiversity, ecology, cultural heritage and history. Thus, beach users felt the need to be kept informed if any decisions were to change these aspects. It is to be noted, however, that on all BF beaches there were several information boards that explained things such as the geographical and ecological aspect of the area including the Code of Conduct. As already discussed in Sections 5.2.7, 5.3.3 and 5.3.5, it seems that these are not given much attention. The literature suggests that when the public is approached face-to-face through seminars, public hearings and other focus groups, participation in a certain subject is easier as they will have the time to clarify any issues they have and educate themselves about the subject. This, in turn, would help them formulate their opinion as well as understand what is required of them (Marzuki, 2015). Given that public participation is becoming more important in management decisions, especially in the age group between 25 and 40 (as shown in the next paragraph), this research urges beach managers to design meetings and make them attractive to relevant beach goers to encourage them to attend (Mannarini, Fedi, and Trippetti, 2010). In addition, given the age group, it is also

important to take into consideration the fact that most of them work during the week, so preferably such seminars or focus groups would take place after working hours or during the weekends to maximise participation.

Results showed that half of those who wanted to be kept informed were 25 to 40 years old (30% and 33% respectively) and were mostly female (18% and 26% respectively). It is thought that the young generation are more likely to engage in these types of questionnaire than older ones (Smith, 2008). This could be due to the fact that the younger generation is more educated and concerned about the environment, thus are more willing to see a change unlike the older generation (Felonneau and Becker, 2008; Franzen and Meyer, 2010). The difference between males and females could either be because the males are not interested in the subject (Markanday, Brennan, Gould, and Pasco, 2013) and/or females are more emotionally oriented and tend to be more open for communication and ready to exchange information (Smith, 2008).

5.4.5. Willingness to participate in management decisions

Being informed was one thing, but willingness to participate was also important to assess. As explained in Section 2.2.4, public participation in beach management decisions is important, as they are the prime users of the resource and can share their knowledge (Duvat, 2012). Knowing the public's preferences and perceptions can contribute to effective beach management (Prati et al., 2016). The following question (Question 21) asked the participants whether they would like to participate in management decisions, not only be informed. Figures 5.41 and 5.42 show the results for both the face-to-face and online questionnaires according to age and gender.

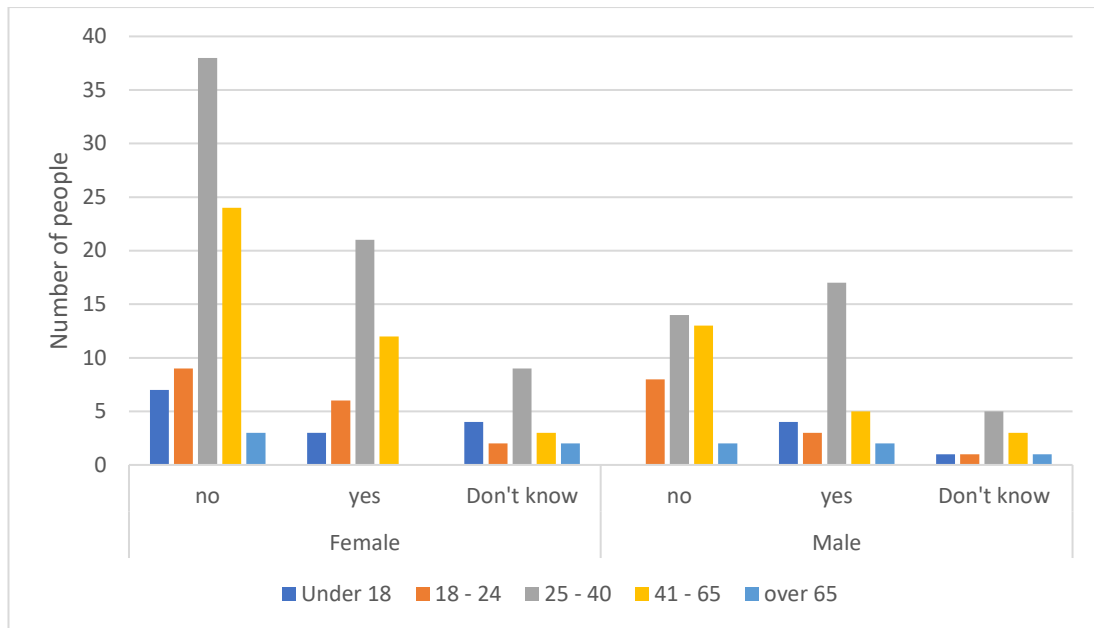


Figure 5.41: Willingness to participate in beach management decisions (face-to-face questionnaires)

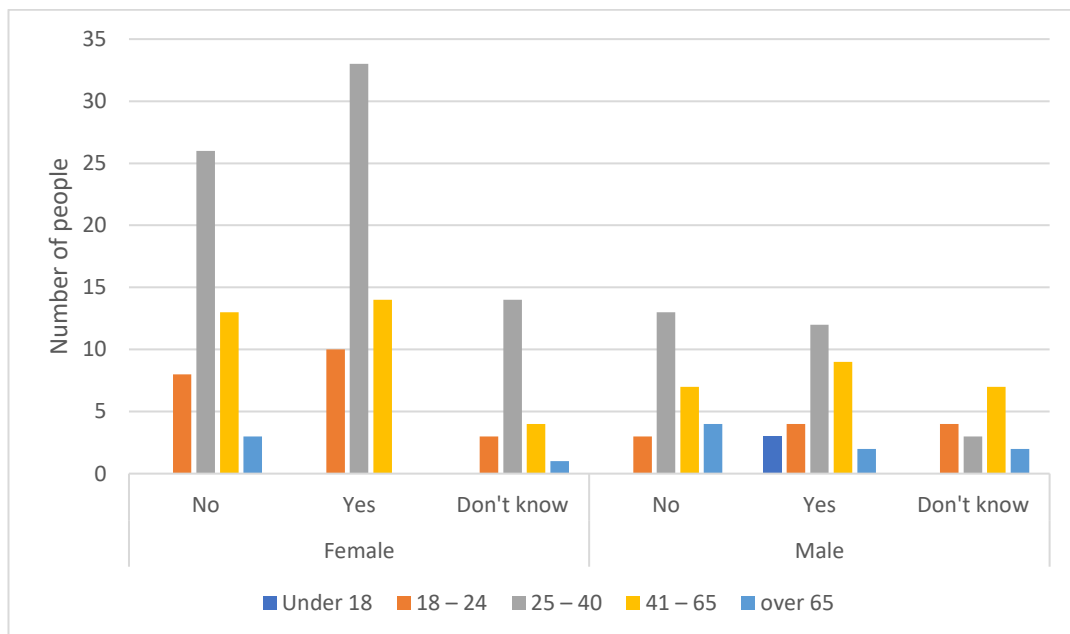


Figure 5.42: Willingness to participate in beach management decisions (online questionnaires)

To this question, there was no common answer. The majority of those who answered the questionnaire on the beach (52%) chose that they did not want to participate. Half of them (23%) were between the ages of 25 and 40, of which 17% were females and 6% were males, whereas those who answered it online were mixed, with 43% choosing 'yes' and 38% choosing 'no'. Also, in this case, the majority were between

the ages of 25 and 40. However, contrary to the results obtained face-to-face, 16% of the females chose to participate, whereas with regard to the males, they gave 6% 'yes' and 6% 'no' answers. The lack of interest could be because the respondents do not really understand the importance of participating in management decisions, thus they are not keen on being involved. Another reason could be that they are not interested in the subject and so are not willing to participate (Marzuki, 2015). Furthermore, it could be because males tend not to participate due to their perceived time constraints and participation would mean exchange of information which according to Smith (2008) is something that females prefer to do. It was of utmost importance to analyse this data by age and gender, so that managers can better understand more who can or want to participate, and at the same time seek alternatives to attract the most possible number of participants.

5.4.6. *Who should participate in management decisions?*

According to Reed (2008, p. 2426) "local and scientific knowledges can be integrated to provide a more comprehensive understanding of complex and dynamic natural systems and processes". The last question on beach management asked the beach users who they think should participate in management decisions, choosing between involving the locals, leaving management decisions to the experts and 'don't know'. Figure 5.43 illustrates the results obtained.

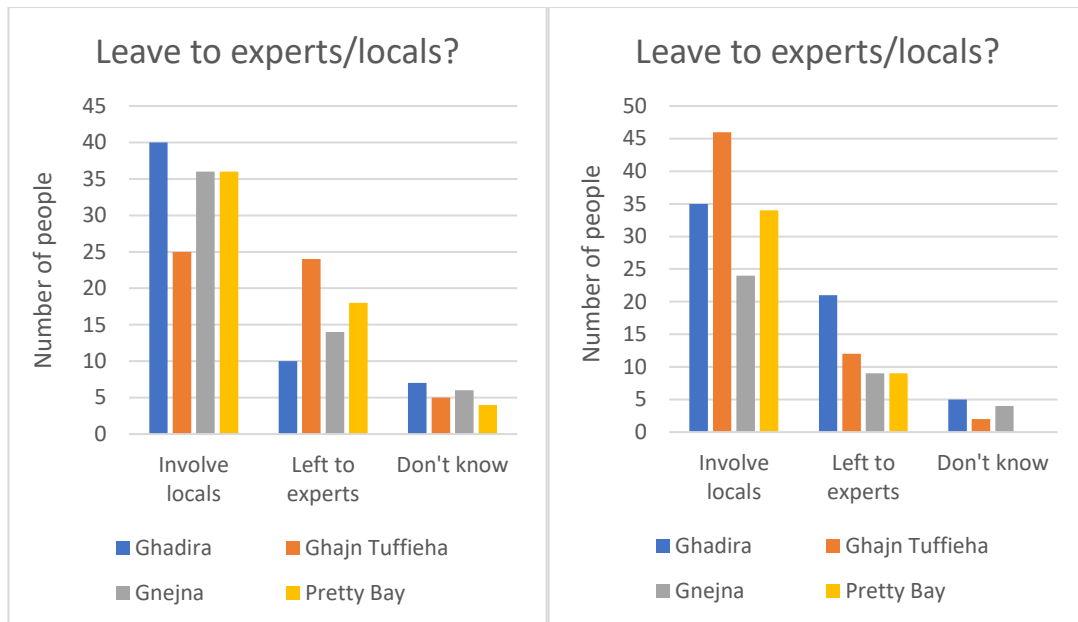


Figure 5.43 Shows whether participants prefer experts or locals to participate in management decisions (face-to-face questionnaires on left, online questionnaires on right)

From both methods of questionnaires, 61% (face-to-face) and 68% (online) respectively of the beach users wanted the locals (meaning the Maltese people) to be given the chance to be involved in management decisions. In particular, more females between the ages of 25 and 40 (19% and 25% respectively) wanted the locals to participate when compared to the males of the same age group (11% and 9% respectively). This could be for the same reasons as explained in Sections 5.4.4 and 5.4.5, that is: time constraints, personal lack of interest (Markanday et al., 2013) and/or not interested in communication or greater social responsibility (Smith, 2008).

These results appear to contradict the answer obtained in the previous question since most of the beach users themselves did not want to participate in management decisions. As explained in Section 5.4.5, this could be because beach users did not understand the process or were not interested in the subject of beach management themselves (Marzuki, 2015). The literature also argues that sometimes beach managers opt for experts' opinions instead of involving the locals as it is less expensive (Marzuki, 2015). However, a study carried out by Woodley (1999, as cited

in Marzuki, 2015), showed that this can result in failure to obtain the support of the locals.

5.5. Summary

As described in Section 5.1, the aim of undertaking this questionnaire was to understand beach users' perceptions and attitudes and identify key issues with current beach management practices. Additionally, results would be compared together with the stakeholders' interviews (Chapter Six) to recommend a better approach towards beach management (Chapter Seven). The questionnaire included 225 face-to-face questionnaires and another 203 that were collected online. The face-to-face questionnaires were collected from four different case studies.

The public is one of the main stakeholders that should be encouraged to participate in the early stages so as to understand their behaviour and preferences (Marin et al., 2009). Their perceptions and attitudes can contribute to more effective beach management (Ariza, Jiménez, et al., 2008; Ariza et al., 2014; Lozoya et al., 2014; Prati et al., 2016). Additionally, when the public is involved in MPs from the beginning there is often a higher chance that such plans are accepted and adhered to (Roca and Villares, 2008; Roca et al., 2009). Nevertheless, such results should be carefully interpreted, given that opinions can vary from those who want to preserve the beach to those who want to develop it for recreational activities (Roca and Villares, 2008).

One of the main findings of this chapter was that beach users did not opt for a beach because it was awarded the BF. However, they preferred a beach that had good water and beach quality, scenery and good accessibility (Lucrezi et al., 2015; Roig-Munar et al., 2018). Even though indirectly such factors are part of the BF criteria, the beach users showed that they did not care about awards but would choose a beach specifically for its appearance or because it was in the vicinity (as in the case of Pretty Bay). In fact, when beach users were asked to define BF and to specify whether certain activities such as barbeques and camping could take place, there

were still respondents who did not know the answer (McKenna et al., 2011; Lucrezi et al., 2015).

Regarding the main issues the Maltese beaches are facing, beach users were mainly concerned about overcrowding of the beach and the amount of litter. This was followed by other issues such as a polluted sea, too much coastal development, beach erosion and too little management. Also, when beach users were asked how a beach can be improved, they suggested more cleanliness, better enforcement and an increase in management. Such issues should be tackled equally in view of the interlinkages between them, for example, the amount of litter depends on the number of people able to access the beach at any one time (Lucrezi et al., 2016). This highlights how beach managers need to monitor the number of people throughout a period of time so that they can plan and manage when and how often beach cleaning should take place.

A further key finding was that even though beach users wanted to be kept informed on beach management issues and believed the locals should be involved in management decisions, they were not so keen on being involved themselves. This is important to bear in mind when thinking about beach management as a joined up process. The next chapter (Chapter Six) addresses these issues further drawing on the interviews that were carried out with key stakeholders currently involved in management processes, including NGOs, beach managers, kiosks, LCs and beach experts.

Chapter Six: Assessing stakeholders' attitudes and aspirations towards beach management

6.1. Introduction

Chapter Six comprises the perceptions (interpretation) of governmental authorities, NGOs, beach experts and kiosk owners towards beach management in the Maltese Islands, gained through individual semi-structured interviews (Table 4.3). This section fulfils Objective Four, identifying key issues and potential stakeholder conflicts.

The chapter is divided into seven main sections, starting in Section 6.2 with how beach management is perceived. This includes the definition of beach management, who is responsible for the coast of Malta, current MPs and their effectiveness and their perception of the beach carrying capacity. Section 6.3 focuses on the BF management tool, how this is being applied, its benefits and drawbacks, how it can be improved and how to manage other beaches outside this scheme.

Section 6.4 discusses other initiatives taken by the various stakeholders such as enforcement, maintenance, cleanliness, reports of activities and communications between the stakeholders. This is then followed in Section 6.5 by the stakeholders' perception of funding available for beach management and the baseline data that are required for the management of beaches. Section 6.6 focuses on the failures and successes of the CAMP Malta. This is followed by Section 6.7 which examines how the public should be involved in management decisions according to the stakeholders. Section 6.8 scrutinises the main issues that Maltese beaches are facing as well as the priorities as perceived by the government authorities.

6.2. Beach management as perceived by the governmental authorities, NGOs, experts and kiosk owners

As described in Section 4.4.4, 22 stakeholders were identified and asked a series of questions related to beach management in the Maltese Islands, such as what beach management is, who is responsible for the Maltese coastline, information regarding MPs and beach carrying capacity. This included stakeholders from both government authorities, NGOs, experts and kiosk owners who were identified due to their

expertise and direct role in designing or maintaining beach management (Table 4.4 and Appendix IV). The variety of stakeholders allowed me to compare responses and to view the issue from a diverse range of perspectives and livelihoods.

6.2.1. Understanding the definition of beach management

As discussed in Section 2.5.3, there are various academic debates as to what beach management is. Nevertheless, authors such as Ariza, et al. (2014); Lozoya et al. (2014); and Prati et al. (2016) all agree that, apart from the beaches' physical characteristics, beach management should also include public participation and stakeholders' perspectives due to their experience and knowledge in the matter. Even though there is a vague definition of 'beach' in the Public Domain Act (Government of Malta, 2016a), this is not clear and a definitive definition of beach management in the Maltese legislation and policies is still not available (Micallef, 2002; Sapienza, 2013) (Section 3.3.2). This creates confusion as to what should be managed and by whom.

Similar to Question 13 of the beach users' questionnaire (Section 5.3.4), the interviews sought to examine what beach management meant for the various stakeholders. It was interesting to note that, just like the beach users, even the professionals cited various interpretations. Most of the stakeholders associated beach management with their jobs. For instance, the MTA beach manager and supervisor, as well as the Nature Trust (NT) Executive Director, thought that management of beaches meant having a beach that was up to standard and met all the criteria of the BF Award such as good accessibility, adequate signage, provision of lifeguards and supervisors and having a clean beach, to mention but a few. The CMD officer described beach management as being the services offered at the beaches such as cleaning and lifeguards, whereas for the health officer, it was to ensure that the water quality of that particular beach was excellent.

"Beach management for our entity is to see that the water quality of the beach is of excellent quality" (Health Officer).

Interestingly, for the same question, the Birżebbuġa LC replied that *“we do not have the authority on the beach but we communicate with the various stakeholders such as the MTA and the Lands Department on the umbrellas and deckchairs and the MTA takes care of the management of the beach during summer”*. Also, as mentioned in Section 4.4.4.2, both the Mellieħa LC and Mġarr LC did not take part in the interview, claiming that they were not responsible for the management of beaches. This contradicts the Local Government Act, which states that this is part of their jurisdiction (Micallef, 2002; Government of Malta, 2020a). They may have said this either because the roles are not clear enough, or they do not have sufficient funds. Additionally, the MTA beach manager argued that MTA’s operating hours at the beaches are between 10 am and 6 pm between June and September. In this regard, the responsibility of the beach outside those timeframes fell under the remit of the LC and the police (P. Dingli, personal communication, June 20, 2016). This shows that responsibilities are not clear and there is possibly a lack of communication between the various sectors due to a fragmented management approach (Micallef, 2002; Shipman and Stojanovic, 2007). This is leading to various illegalities, such as barbeques and camping on the beach after the MTA supervisors leave, as there is neither monitoring nor enforcement.

Other stakeholders such as the ERA and the PA officers as well as the MNHP site manager, who work within the environment sector, all agreed that effective beach management means human activities are managed to reduce conflicts among beach goers without compromising the natural habitat. The ERA officer argued that *“Beach Management is to ensure that the natural habitat is improved if it is not in a good status or to retain its status if it is a good one, that users have a positive experience without causing nuisance to others or damage to the environment”*. Public participation and involvement were also given importance by both the ERA and the PA. This is most probably because they often consult with the public. Such interpretation was very similar to those given by Lozoya et al. (2014), who emphasised the importance of public participation at all stages. As for the experts, the interpretation varied from safeguarding the natural ecosystem to the preservation of the environment as well as the management of the beach activities.

The Associate Professor specified that *“BM is the management of beach uses rather than the beach itself”*, whereas, the Associate Academic argued that it is the *“preservation of a natural beach ecosystem”*.

It would be pertinent to say that since there is no specific definition for beach management, such a concept is subject to interpretation, with most of the stakeholders associating it with the BF. Various definitions can lead authorities to focus on their activities rather than taking an integrated approach (Ariza, Jiménez, et al., 2008; Sardá et al., 2015; Lucrezi et al 2016). From all the definitions obtained, only the ERA and the PA officers were close enough to the description of beach management as defined in Chapter Three. However, none of the interviewees mentioned the importance of collaborating with other stakeholders (Ariza et al., 2014; Prati et al., 2016).

6.2.2. *The authority responsible for Malta’s shoreline*

One of Malta’s major issues facing its beaches is the fact that there is no one single authority that is responsible for their management (Planning Authority, 2002; PAP/RAC, 2005). Alternatively, such management is divided between different sectors, each having their responsibility (Micallef, 2002; MEPA, 2010). This was also confirmed by most of the interviewees, who said that responsibility was fragmented amongst different departments. The Birżebbuġa LC mentioned the *“various stakeholders, for example when we have an oil spill, we contact the Port Authority, the MTA for beaches and so on”*. The PA officer stated that *“it is a governance issue, everyone sees it [the beach] from their own perspective such as the CMD from a cleaning perspective, the ERA if it is protected or not, the Lands Authority to see if there are encroachments or not, the PA to see whether to give development permission or not, the MTA on beaches and so on. There should be an integrated approach between all departments”*. For instance, it was well known that the MTA was responsible for the BF and some other beaches which were also being managed by them. However, other agencies had specific roles. The Lands Authority issued concession permits, TM set up swimming zones, the ERA was responsible for those

beaches that fell under a NATURA 2000 site such as Golden Bay and the CMD maintained and cleaned all the beaches.

As discussed in Chapters Two and Three, it is difficult to have effective management when the latter is fragmented across different sectors as this can lead to duplication of work, confusion and lack of communication (Shipman and Stojanovic, 2007; Sardá et al., 2015). This issue was reflected by the kiosk owners' when asked who they thought was responsible for the coastline. They ended up mentioning those authorities that they work with on their beach. Għadira Kiosk 1 owner mentioned three different authorities taking care of the beach and showed her frustration about how difficult it becomes when one of the authorities wants to implement something and the other one does not allow it:

"All the three ministries: the MTA, the ERA, and the CMD. If these three ministries do not agree amongst them, we will have confusion. One of the ministries wants to clean the beach and the other does not let them. We cannot continue like this". (Għadira Kiosk 1)

Għadira Kiosk 1 owner was referring to the cleaning of the seagrass from the sandy beach. In 2017, ERA had issued guidelines titled Operating Procedures on Beach Cleaning, where one of the requisites was to remove the seagrass only between April and September¹⁸ to minimise sand erosion. The CMD, who is the responsible authority for removing such seagrasses from the sand, complained that the timeframes were close to the bathing season and so they did not have enough time to clean all the beaches. This resulted in some beaches being left with seagrass during the bathing season and beach users started complaining to the kiosk owners, even though the latter were not at fault. When Għadira Kiosk 2 owner was asked the same question, he only mentioned two authorities managing the beach as opposed to those mentioned by the first kiosk owner, but also expressed his frustration that it is confusing:

¹⁸ Previously, this used to be removed earlier in the year because April was too close to the bathing season

“The Ministry for Tourism and the ERA [are the responsible authorities]. It is a mixture and sometimes it is confusing whom to contact. It would be a good idea to have one department which takes care of everything that is related to the management of the beach”
(Għadira Kiosk 2).

The Għajn Tuffieħa kiosk owner mentioned the MTA and the GAIA Foundation as the responsible authorities for that particular beach. However, he also showed disappointment that wardens only manage the beach during summer and as a result he ends up reporting illegalities (such as barbeques) or litter during the other seasons. The Pretty Bay kiosk owner also mentioned the MTA and the Ministry for Tourism as the responsible authorities, since during the summer the beach is managed by the MTA, whereas at Ġnejna Bay, which at the time of the interview was not being managed by anyone, the kiosk owner mentioned the LC as the leading authority but also added *“but nothing is happening”* when they report illegalities or litter to the LC. This could be due to the fact that when the Mġarr LC was contacted they said that the beach was not their remit.

The above arguments show the frustration of the stakeholders with regard to those who are responsible for the beaches and what their roles and results are. To address this problem, this research suggests the setting up of an Inter-Governmental Committee (IGC) and Local Participatory Committee (LPC) to help to manage beaches (Micallef, 2002; Lozoya et al., 2014). Within the IGC, the different authorities would meet and discuss any issues and recommendations from an authority’s point of view, whereas regarding the LPC, all the stakeholders would know who to contact and would have the opportunity to meet frequently, converse and recommend management measures to the authorities, thus enhancing communication. This LPC *“would be a possible way for achieving the horizontal integration and probably for improving spatial and vertical ones as well”* (Lozoya et al., 2014, p. 405). Additionally, there should be a Beach Management Unit (BMU) that oversees the management of all beaches (Section 7.2.2). This would ensure that all the Maltese Islands beaches are managed and taken care of, not only those that are awarded the BF or those that are allocated a budget.

6.2.3. *Management plans/policies/guidelines and their effectiveness*

As discussed in Chapter Three, there are various policies and legislation that directly or indirectly affect beaches (such as what type of activities can be done on the beach). There are also the Operating Procedures on Beach Cleaning (Environment and Resources Authority, 2017) and the Beach Code of Conduct (Malta Tourism Authority, 2020a). However, most of these policies/guidelines deal with specific tasks such as litter, cleaning and activities on the beach, and there are no MPs that deal specifically with the integrated approach of beach management. The stakeholders were asked whether they knew of any legislation/policies or anything else that covers the coastline and beaches and if available, whether they were effective. In addition, they were also asked if they knew about other policies that were in the pipeline. The answers they gave are outlined in Table 6.1.

Table 6.1: Current/proposed management plans/regulation/guidelines that were mentioned by the stakeholders

Name of plan	Description	Status
NATURA 2000 Management Plans	Prepared by the then MEPA in 2013 and now under the remit of the ERA. These, however, focus on the management of terrestrial sites that were declared NATURA 2000 (Environment and Resources Authority, n.d.). Thus, management is limited to the ecological part of the area, such as limiting trampling on sand dunes and protecting the habitats.	Current
Operating procedures on beach cleaning	These were issued by the ERA in 2017 and describe the procedures to adopt to clean the beach, especially with regard to the seagrass meadows.	Current

Integrated Coastal Zone Management (ICZM)	This is the PA's remit and they are currently preparing a coastal strategy (PA officer, personal communication, April 27, 2018).	Current/ Future
Strategic Plan for the Environment and Development (SPED)	This is the PA's remit and replaced the Structure Plan in 2015	Current
The management of the north-west coast of Malta	Was part of the CAMP Malta project	Past
Marine Strategy Framework Directive (MSFD)	It is the ERA's remit and its objective is to obtain Good Environmental Status in the 25 nautical mile Fisheries Management Zone by 2020	Current
Water Framework Directive (WFD)	Its objective is to have good water quality in the inland and coastal waters up to one nautical mile.	Current
White Flag Beaches	According to the interview held with the MTA in 2018, this was being proposed by the then Ministry for the Environment, Sustainable Development and Climate Change (MESDC) and had to focus on underwater and plastic-free beaches. MTA had suggested that they would like to collaborate with the then MESDC ¹⁹ should the latter propose the White Flag on Blue Flag beaches so as to minimise confusion	Past

¹⁹ In 2020, there was a change in cabinet and this Ministry changed its portfolio to the Ministry for the Environment, Climate Change and Planning (MECP)

	with the public. Nevertheless, in 2019, this initiative was shut down as it was deemed to be a scam by the Croatian who had invented it (Bonnici, 2019; Muscat, 2019).	
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The majority of the stakeholders agreed that there were enough MPs and policies to follow, but concern was maintained about the lack of implementation and enforcement. They also agreed that cooperation between different departments is minimal because their interests are different (Sardá et al., 2015; Lucrezi et al., 2016). As the Associate Academic expressed:

“There are plans and policies but then it all revolves around the departments and their willingness to cooperate. Unfortunately, inter-departmental committees are sometimes created for the right cause but then nobody wants to surrender some of their jurisdiction, conflicts arise between them and the initial objective for creating such a committee is forgotten. There should be a coherent strategy that recognizes all stakeholders and see what the priority between them is” (Associate Academic).

Only one of the stakeholders showed confidence in one of the MPs. This was related to the NATURA 2000 MPs, where the ERA officer stated:

“The management plans are still being implemented so they are still in their early stages to determine whether they are effective or not. Nonetheless, activities related to beaches are already being controlled and I think that they will have a positive impact” (ERA officer).

Another concern that was raised by the stakeholders was the lack of cooperation there was among different authorities. This supports the research previously discussed (Micallef, 2002; Micallef and Williams, 2003; MEPA, 2010; Sardá et al., 2015) that since there is no one single body and no MPs, conflicts and competition among different authorities/stakeholders are imminent. Also, resolving conflicts

would become bureaucratic, as issues have to pass through different sectors (Micallef, 2002). These issues have been known since the 1990s and have been identified in many previous reports such as the Structure Plan, monitoring reports, Coastal Strategy Topic Paper, results from CAMP Malta as well as the State of the Environment Reports (Chapter Three). Nonetheless, this research found that nothing had been done to solve them as the same problems re-emerged.

6.2.4. *Perception on beach carrying capacity*

Beach carrying capacity is very complex to define and very subjective (Pereira Da Silva, 2002; Williams and Micallef, 2009). Researchers such as Silva and Ferreira (2013) and Giné et al. (2018) identified two types of carrying capacity: the physical, which measures the number of people that a beach can carry in a sustainable way, and the social, which is based on the beach users' perception. As outlined in Section 3.3.6, the then PA had estimated that a bather would require at least 3 m² of beach space, which is clearly more than the Maltese beaches can sustain (Micallef, 2002). Currently, there are no beach carrying capacities in Malta, but the results obtained from the semi-structured interviews indicated that most of the stakeholders were in favour of such a measure. However, they were concerned about how to implement and enforce it.

Some of the stakeholders provided suggestions on how they felt this could be implemented. For instance, the Professor suggested that beach users *"should be encouraged to go to adjacent areas of [the] shore platform"*. He also suggested that in order to identify the number of beach users that a beach can sustain, one must spend at least *"three seasons measuring how many people go to that beach"* but he also admitted that it is very difficult to do so because people move around.

The Associate Professor also recognised the importance of studying beach carrying capacity because this would affect the quality of the beach. However, he argued the need for understanding beach user's perception and their culture:

"for example, in Brazil, they don't mind being on a crowded beach, [however] one has to enforce them and make clear decisions. For

example, concessions have to have tougher regulations, parking areas must be rigidly controlled – when a parking area is full, people should not be provided with alternatives and whoever parks wrong, they should be fined” (Associate Professor).

Another recommendation on how beach carrying capacity could be implemented was given by the Żibel manager who suggested to:

“collaborate with Which Beach [a local website that suggests beaches which are good for swimming] for example and when the beach is full, they put a sign on their website saying this, so that people do not go there. For example, at 10 am the beach in Għadira was at 86% of its capacity, so you know that if you go there it is almost full. Then the same website can provide you with different beach alternatives” (Żibel Manager).

Conversely, both the MTA beach manager and the Birżebbuġa LC did not agree with this concept and argued that it did not make any sense to apply a carrying capacity, given that Maltese beaches are small. They were also concerned about its implementation and enforcement. Based on these outcomes, and as was discussed in Section 3.3.6, it could be construed that since the MTA is part of the tourism industry and is also responsible for the BF scheme, they would not want to limit the number of tourists and locals on beaches, as this would lose them money. This could also be the case for the Birżebbuġa LC, because if they start limiting the number of people on the beaches, they would be afraid that the economy would also decrease. This is in agreement with previous studies carried out by Lucrezi et al. (2015, 2016), Sardá et al. (2015) and Roig-Munar et al. (2018) where they argued that the BF and other schemes are being used to attract users, with the tendency of focusing on particular aspects leaving other important things aside.

6.3. Stakeholders' perception of the Blue Flag Award

The BF Award is the main management tool that is currently being used for the Maltese beaches. The MTA is the lead authority that takes care of all the logistics, as explained in Section 6.3.1 below. The NT (NGO) is the regulator and oversees that the MTA and other bodies that have the BF are abiding by the required criteria. Even though this scheme has been operating in Malta for 11 years (since 2009), from the beach users' questionnaires (Section 5.3.1) it was apparent that only half of those interviewed knew what a BF beach was, even though two of the case studies are BF (Għadira and Għajn Tuffieħa beaches).

Sections 6.3.1 to 6.3.4 discusses the current practices and benefits and drawbacks of having BF from the stakeholders' point of view. It also discusses how to improve the scheme and how other Maltese beaches which are not BF can be managed (such as Ġnejna beach).

6.3.1. *Current practices*

As explained by the MTA beach manager, the management of Malta's beaches commenced in 2002 when Golden Bay was used as a pilot study and boy scouts acted as supervisors. Due to its success, it was then followed by a request from the hoteliers near St. George's Bay to replenish the beach, which the MTA started working on. After the first attempt at replenishing the beach in 1980 failed due to a problem with the location of the previous culvert, which meant that a heavy storm washed all the sand away (Spiteri, 1990; Farrugia, 2017; Zammit Pace et al. 2019), the culvert was relocated. Studies by Borg et al. (2006) show that the second attempt at replenishing the beach in 2004 was a success. After a continuous effort by the MTA, St. George's Bay was awarded its BF Award in 2009. Following this, on the request of Buġibba hotels, the MTA also replenished the perched beach of Buġibba, which also got its first BF Award in 2010 (Dingli, 2019).


For every beach that is being managed by the MTA, the MTA beach manager takes care of recruiting the supervisors, who are generally university students, and

provides them with the appropriate training, uniform and identification tags. The manager also issues the tender for the lifeguards and sees that its operator provides everything such as the flags and uniforms. Additionally, the beach manager also coordinates with other departments such as the CMD that are responsible for the cleaning of beaches and providing the adequate beach furniture such as ladders and bins, and the Foundation for Tourism Development Zone (FTDZ) who are responsible for the remaining services required on the beach, such as the installation of beach showers and lighting.

As explained in Section 6.2.2, the management of beaches is divided among different authorities. Even though a basic level of communication means that to some extent, the job is being done, this research still proposes the setting up of a single authority that takes care of all this and ensures an effective and directive management system. In addition, as explained by the MTA beach manager, the supervisors are usually university students or people with secondary or tertiary education, thus they change every few years (if not annually) and so there is often no handing over from one year to the next. Also, some of them, do not have a direct interest in the management of beaches, as vacancies are open to everyone from different areas of interests and they probably take the job just to earn income for the summer²⁰ (Figure 6.1). This could end up doing more harm than good as they would not know the specifics of the beach and its MP and they would not have the proper knowledge to manage it. In view of this, this research proposes that properly qualified and experienced beach managers should be employed full time for the whole year so that all beaches can be managed throughout all the seasons. Williams and Micallef (2009) and Lucrezi et al., (2015) also suggest that supervisors should have the legal power to enable them to enforce the law as well to manage the current contraventions that frequently occur. Additionally, Lucrezi et al. (2015, p. 226) recommend that “the BF programme should request that any person who is responsible for the management of awarded beaches should possess an appropriate level of environmental education, ideally

²⁰ This year (2020), the vacancy might attract other people from totally different backgrounds who usually do not apply, as many people have lost their jobs as a result of the COVID 19 pandemic and so they would be willing to do any job as long as they are earning money.

postgraduate or professional [...] should go through extensive training and should show dedication to their role”.



Eligibility criteria

The post holder is required to:

1. To be at least 16 years old by 1st June 2020;
2. Be fluent in both **Maltese** and **English** i.e. written, spoken and reading;
3. Have a Secondary Education background (preferably tertiary education i.e. University Students, ITS or MCAST);
4. Be mature and hold a very good common sense;
5. Hold a clean police conduct (not more than 6 months old);
6. Determined and willing to carry out the task assigned as per instructions given;
7. Is to have a valid driving licence or if otherwise, commit to have his/her own transport to and from the place of work;
8. Is to have and provide a VAT number and proof that he/she is a self-employed/part-timer (this is to be provided following nominations);
9. Eligible candidates must have a mobile phone and be willing to take and share photos and provide details as necessary on the chat that will be created for the season accordingly.

Figure 6.1: The beach supervisors’ vacancy and eligibility criteria (Source: Malta Tourism Authority, 2020b)

6.3.2. *Benefits and drawbacks of a Blue Flag beach*

All the stakeholders agreed that having a BF improved the quality of the beach. This is because the beach must attain certain criteria to get the award, such as being clean, being safe and having the provision of lifeguards and supervisors. Additionally,

this is also because BF beaches take priority over those that are not. In fact, the MTA beach manager stated that:

“[...] if something happens in a BF [beach] such as litter on the beach or broken lavatory facilities, the flag has to be put down, whereas in another non-BF beach we deal with the problem, but nothing happens if the problem cannot be solved immediately. BF beaches take priority over other managed beaches with regard to maintenance, since there is the possibility of having surprise visits from abroad and we lose the BF” (MTA beach manager).

Nevertheless, some of the stakeholders were also concerned about the viability of the BF and how much the environment is being integrated within its management. For instance, the ERA officer argued that the seagrass is important for the conservation of the sand, but it is usually removed. This is most probably for aesthetic purposes. In this regard, the ERA issued the Operating Procedures on Beach Cleaning, to try and minimise the impact on the environment. Additionally, the GAIA officer argued that one of the purposes of having a BF is to attract people to that particular beach. Hence, often managers find it difficult to know which aspect to prioritise and *“whether they protect the beach for its environment or for its use”* (GAIA officer). A similar argument was made by Lucrezi et al. (2015, p. 212), where it was argued that one of the BF weaknesses was that it is being “exploited as a marketing tool, rather than being used as a management tool”. Thus, other management tools (such as beach users’ and stakeholders’ perceptions and attitudes) should be used.

Also, Ghadira Kiosk 1 owner highlighted the issue that BF beaches are only managed during the day and only during the summer and this is creating other problems and illegalities during the rest of the night/or the other seasons when there is no supervision and/or enforcement:

“In winter it is a total disaster, there are dogs running on the beach and litter, there are no lavatory facilities, there is lack of cleanliness”
(Ghadira Kiosk 1 owner).

In addition, Għadira Kiosk 1 owner also complained about the fact that certain activities were totally banned rather than restricted to a certain area, such as barbeques and camping. Such activities used to form part of the Maltese culture, where families and friends used to meet on the beach to relax after a week of work. Some of the people used to buy drinks and food from the kiosks. However, since banning such activities, most of the people no longer remain late at night on the beach, with some seeking alternative options. As well as changing the Maltese culture, this has also created a loss for the surrounding businesses. Williams and Micallef (2009, p. 99) suggested that certain areas at the back of the beach should be allocated to barbeques where “facilities are provided as a permanent fixture at the back of the beach”. This would minimize the impact on the environment. But monitoring and enforcement should be available to oversee that such facilities are not vandalised.

The Associate Professor argued that a BF scheme on its own is not enough to manage the beaches, but it could be used as a first step towards an integrated MP. Researchers such as Ariza, Sardá, et al. (2008); Lucrezi et al. (2015); Klein and Dodds (2018) and Zielinski and Botero (2019) also agree that not all the aspects are included in the BF scheme, such as the perceptions of the beach users and the physical characteristics of the beach, which can lead to poor management. Additionally, there is little information on the effectiveness of the BF being used as an environmental management tool, thus more research is needed in this regard (Klein and Dodds, 2018).

“If they use the Blue Flag system to develop a management plan, which can improve the beach quality over time, then yes it could be a good system, but on its own is limited” (Associate Professor).

Both the Associate Academic and the Professor agreed with the Associate Professor, contending that the BF gives more attention to the recreational aspect of the beach rather than the ecosystem. A beach has to include its surrounding environment and thus the BF tool cannot be used alone.

6.3.3. *Improving the Blue Flag Scheme*

Several suggestions were made by different stakeholders such as NT and Žibel in order to improve the BF scheme, such as extending its hours to cover night-time, including environmental aspects of the beach, as well as monitoring the issue of litter. The kiosks suggested the need for more lavatory facilities, showers, additional parking spaces and also recommended that lifeguards should be available earlier during the day and also throughout the year, as the beaches are full of people even in April. It is to be noted that the authorities gave recommendations for the long-term improvement of the BF, whereas the kiosks suggested things that could be improved immediately. This shows the different opinions between managers and those who actually use the beach; thus, it is evident that more cooperation is needed between various key players (Klein and Dodds, 2018). It also shows that there are some easily imposed fixes.

In addition, Għadira Kiosk 2 owner also emphasised the importance of protecting the sand, given that aeolian processes move it towards the back of the beach, creating a heap near the wall. Once this is high enough it spills on to the pavement and the adjacent road, resulting in the loss of sand (Figures 6.2 and 6.3). The kiosk owner also argued that sand is being removed when the seagrass is cleaned and he suggested that there should be variations in the way it is collected, such as a change in machinery and more monitoring on how this is being done. However, when the CMD officer was made aware of the above comment, the officer denied that this was the case and argued that CMD was bound by the ERA operating procedures. This shows the lack of cooperation between those stakeholders who work directly on the beach and the authorities that are managing it. In fact, all the kiosks agreed that they wanted to be more involved in discussions and management decisions, as they earn their income from the beach.

“We are open to more ideas and meetings, as very often we are not consulted or not informed directly. We would like to be more involved in the management of this beach as well” (Għadira Kiosk 2).



Figure 6.2 shows the sand being moved upwards (arrow) covering most of the ramp that is used by beach users to enter the beach. (Source: Author, 2020).



Figure 6.3 shows another example of the sand being moved towards the road, forming a heap until it spills or it is blown on the street (arrow). (Source: Author, 2020).

Finally, the MTA beach manager argued that even though the international BF scheme continues to improve by adding more criteria, and monitors how beaches are being managed worldwide, it does not differentiate between northern and southern countries. For instance, according to the regulations, educational activities

are all to be carried on the beach during the summer. However, air temperatures are different in various countries. For example, when in the northern countries it is 20 degrees Celsius, on Malta, it would be 30 degrees Celsius, so it would be too hot for children to attend such activities. Thus, the MTA is currently communicating with FEE so as to change the period in which activities are done, for better attendance.

6.3.4. Managing other beaches outside the Blue Flag Scheme

As explained in Section 3.4.1, in 2019, there were 12 BF beaches and some other beaches such as Pretty Bay and Fajtata beach that were also being managed by the MTA, the GAIA Foundation or other hoteliers. Nevertheless, there are many other beaches that are not being managed, except for their maintenance and cleanliness, which is undertaken throughout the year by the CMD. Some of the stakeholders, who are either directly involved in the management of beaches or experts on the subject, were asked how, in their opinion, they would manage those beaches that were not awarded the BF. Responses were mainly divided into two: either managing them the same way as the BF beaches or else appointing a manager, or through the active role of LCs which see what needs to be done and report to an advisory council or another national committee. Ideally, as already mentioned in Section 6.2.2, an IGC and LPC should be set up to help in the management of beaches (Micallef, 2002; Williams and Micallef, 2009; Lozoya et al., 2014). The role of such a committee is further discussed in Section 7.2.6.

6.4. Other initiatives carried out by the stakeholders

This section deals with other initiatives that are carried out by different stakeholders such as enforcement on beaches, their maintenance and cleanliness, and reports that the authorities draw on particular beaches as well as any communications/meetings that the stakeholders organise between them.

6.4.1. *Enforcement*

Both the beach users (Section 5.4.3) and the stakeholders agreed that enforcement of regulations was lacking, especially on beaches. Lack of enforcement could also be seen in those beaches that were awarded the BF, given that supervisors were only managing them during the day (between 10 am and 6 pm). This resulted in people littering the beach, having barbeques and camping and damaging things such as litter bins and shower facilities later in the evening. Hence, it is imperative that some action is taken to avoid or reduce such criminalities. In order to be able to manage and enforce a beach 24 hours a day, the Associate Academic suggested the use of surveillance cameras, where a person would monitor the beaches from a remote location and if they suspect something they notify the police to go there and investigate. He claimed that:

“If you give a fine to those who damage the environment, most probably, chances are that they don’t do it again. As soon as you touch someone’s pockets, then they start to learn” (Associate Academic).

Such monitoring and enforcement could be integrated within the BMU (Section 7.2.2) and any money collected from fines would go to a fund to pay for the damages. However, this research suggests that instead of police, there should be enforcement officers allocated. Similar results in South Africa, as recognised by Lucrezi et al., (2015), identified that the Code of Conduct was not being observed and that one way to solve this problem was to give more power to the supervisors. The latter has also been recommended by Micallef (2002) and Williams and Micallef (2009).

6.4.2. *Maintenance and cleanliness*

The Beach Cleansing Unit within the CMD is responsible for keeping the beaches and their surroundings free from litter as well as providing general maintenance. This includes providing recycling bins to various beaches, as well as beach furniture, such as ladders. Sand sifting is also carried out every two weeks on each sandy beach and seagrass is removed with special machinery following the ERA’s operating procedures. Even though they take care of each beach around Malta,

“those beaches that are BF [are given] more attention since they need to maintain a certain standard in order to achieve all the criteria. [However], the other beaches are still serviced regularly from Monday to Sunday all year round” (CMD officer).

While it was identified that this service was being provided, evidence from the beach users’ questionnaires demonstrated that 26% of the participants believed that the main issue for Malta’s beaches was litter. People complained that although bins were emptied in the morning, by the evening these were all full up (Sections 5.3.6, 6.7.3.1 and Figure 6.4). Others complained that bins were not enough to cater for all the beach users. Conversely, the Għadira Kiosk 2 owner argued that:

“dustbins are enough and in summer they are cleaned twice a day, but people are not educated enough not to litter” (Għadira Kiosk 2).

From studies that were carried out in Turkey and Italy by Petrosillo, Zurlini, Corlianò, Zaccarelli, and Dadamo (2007), it was understood that beach users do “recognise that they are the product of public insensitivity and lack of environmental conscience” (Lucrezi et al., 2015, p. 225). In this regard, it was suggested that if beach users were well educated, especially on BF beaches, it would enhance their knowledge of the possible threats to the ecosystem and beaches, and would increase their chance of contributing back to the system (Lucrezi et al., 2015). To a certain extent there are NGOs independent from the CMD, such as Żibel and the GAIA Foundation, who often organise beach clean-ups in different places, as well as raising awareness and educating people on the subject. For instance, the Żibel manager claimed that when they do it on sandy beaches, they:

“try to preserve the sand as much as possible. For example, when we find bottle caps, we put them in a bucket full of water, we shake them and let it settle to remove only the caps” (Żibel manager).

The Żibel Manager also suggested the use of water fountains at the back of the beach, so that people can wash their feet before leaving so any sand on them is left on the beach, rather than everyone going to their cars and removing the sand there, which

is then lost. Għadira Kiosk 2 owner claimed that they have to clean their concession every day:

“especially from cigarette butts and small remaining seagrass that would deposit overnight etc. [In addition, they] have their own bins and do separation of waste. [They] also offer a garbage bag to [their] clients so that they can throw the rubbish in it and then [they] separate the waste for them if they do not do it themselves” (Għadira Kiosk 2 owner).

6.4.3. *Writing up of reports related to beach management*

This question was significant to identify whether reports were being written on beach management and, if in the affirmative, whether these were being used to manage the beach. From the interviews, it transpired that most of the authorities who had direct management on beaches did write reports, but these were written because they were obliged by a higher management body such as the EU. However, such reports were all stand-alone documents focusing on a particular subject such as the bathing water quality. From the interviews, it seems that no attempt has ever been made to use all the data collected and analyse it holistically to identify issues and suggest measures to improve the management.

Some examples of reporting were:

- CMD meeting on a weekly basis to report and discuss issues and how these can be solved.
- The GAIA Foundation submitting a yearly MP on how they are going to manage the site of Għajn Tuffieħa, since it is a NATURA 2000 site. If the MP gets accepted by the ERA, then the GAIA Foundation must write two reports in a year to inform ERA about their progress.
- Daily reports from BF beaches including any issues (such as accidents and vandalism) that the supervisors encountered on the beach. These reports

were submitted to the head supervisors and each month the latter compiles a monthly report on that beach and submits it to the MTA beach manager.

- An end-of-season report written for all the beaches under the MTA and submitted to FEE through NT. Contents of such a report would include waste management, lifeguards, injuries and their type, and any fatalities. This report is initially seen and discussed between the NT and the BF National Jury²¹, where anonymously they recommend (or otherwise) that particular beach for the BF. The report, together with the recommendations, is then sent to the FEE who issue its decision on the awards.
- The EHD analyse the raw data collected on the bathing water quality and write a report which is sent (together with the raw data) to the Commission. These are reanalysed by the Commission whereby they confirm the results provided by the EHD.

It is quite interesting to note that there are several reports being written about the status of the beach. However, all these reports are only being used to satisfy either the EU, the ERAs or FEEs obligations. All the data collected are not being used to manage the beach in the long term. This continues to enhance the argument that one single authority should be formed and all the reports/data collected should be stored in a common database (PAP/RAC, 2005a) and used in the MPs (Section 7.2.4).

6.4.4. *Communications between the stakeholders*

According to Ariza, Sardá, et al. (2008, p. 63), “management coordination is usually a significant problem due to the different levels of government (national, autonomic and local) involved in beach management, and limited or non-existent communication”. From the interviews obtained by the different authorities it seems that this is not the case in Malta, as all the government authorities that were directly involved in the management of beaches said that they were in regular communication with other stakeholders. This could be because, given that it is a

²¹ This is composed of the ERA, the Civil Protection, the MTA (not the same person who is responsible for the BF), the Education Department and the EHD.

small country and the LC is not involved in management, it is easier for authorities to communicate because they are within the same level of government. For instance, the CMD was in regular communication with the MTA with regard to the BF beaches, and with the ERA and Wasteserv for the removal and dumping of seagrass and waste during summer.

Another example was that of the GAIA Foundation, who were in regular contact with ERA regarding the MPs, the MTA with regard to the BF activities, the CMD in relation to the waste management, with the Police for enforcement, with Signita restaurant with regard to activities on the beach, and other NGOs and groups such as Žibel, Friends of the Earth, Malta Clean Up, Let's do it, Get Trashed Malta and Sharklab to raise environmental awareness through activities and campaigns. As stated by the GAIA Foundation:

"The relationships between the GAIA Foundation and all of the above have greatly increased and we are finding much more support and cooperation, which is really positive" (GAIA officer).

The MTA beach manager also mentioned that they were in regular communication with the relevant stakeholders and that when there was a problem, such as bins not being emptied, they involved everyone so that everyone was aware of the situation. However, this seemed to contradict what the two kiosks in Għadira said about communication. This is because both kiosks only learned about the government project to extend Għadira beach (the place where they work every day) from the Planning Application that was attached to a pole on the beach and from the news, and not from the MTA or the Ministry for Tourism. In addition, they also criticised the way the government authorities handle complaints, as when they criticised something none of the authorities claimed to be responsible for the issue and they were left without any response.

This shows that, although there might be active communication between the same levels of government, this might not be the case for other stakeholders who are dependent on them. As mentioned by Prati et al., (2016), the involvement of stakeholders from various levels (such as local and national) is very important due to

their different expertise which could help in dealing with problems related to management. Hence, to avoid conflicts Prati et al., (2016) recommended the need for a common vision between the stakeholders. Thus, as mentioned in previous sections (Sections 6.2.2 and 6.3.4), this shows the importance of creating a LPC where stakeholders would have the chance to discuss issues and present recommendations.

6.5. Stakeholders' perception of funds and baseline data required for the management of beaches

This section discusses whether the current funding available for beach management is enough for the relevant stakeholders, as well as what type of baseline data are required for the management of beaches according to the interviewees.

6.5.1. *Availability of funds towards the management of beaches*

Through talking to the key stakeholders, it transpired that there were two types of funds available to support beach management: (1) funds that were allocated to government authorities from the central government budget and (2) funds that were given voluntarily to organisations such as NGOs. In addition, there were small businesses, such as the kiosks on the beach, who paid an annual fee to the responsible authority to be able to operate.

Both the MTA beach manager and the Health officer were satisfied with the allocated funds each year. The MTA beach manager stated that they:

“spend circa one million euros each year for all the beaches that fall under their remit. Most of the funds go for lifeguards and supervisors during the bathing season, the rest goes for the beach furniture which is taken care of and cleaned during the winter period. At this point, funds are adequate, as they are planned ahead” (MTA beach manager).

The Health officer was also pleased with the allocated funds, which was circa 50,000 Euros a year, that they were assigned from the internal funds of the Directorate, which would also have been planned.

Conversely, the CMD officer stated that the budget is never sufficient and if they had more funds they could do more things such as changing all the bins. The CMD officer explained that the funds were allocated to the entire CMD and were mainly spent on wages and operational costs (CMD officer). Even the MNHP site manager argued that three-quarters of the funds went for salaries and the remainder to manage the site. However, he explained that this was not enough and so they were thinking of ideas on how to collect funds themselves, such as organising events where people have to pay/donate money (MNHP site manager).

There seems to be an imbalance in how the funds are being used. In fact, all the authorities agreed that, primarily, funds were being used for salaries and then the remaining were used for operational and management costs. In line with the EU ICZM Recommendation, this research suggests a more in-depth analysis of how funds are being allocated and how these can be improved, as well as to provide a long-term financial plan (Shipman and Stojanovic, 2007). Long term funding can be achieved either by introducing funds for coastal/beach management responsibilities to be undertaken by the LCs, or by providing direct funds for a number of years²² in which coastal MPs and their implementation should be set (Shipman and Stojanovic, 2007).

Some of the funds for beach management could be obtained indirectly from the beach users. For instance, the MTA provides free showering facilities on some of its beaches. Since they are free, this leads to an increase in water consumption (Roig-Munar et al., 2018) due to people ending up using them for a long period of time, or children playing with the water, especially during the night, when there are no supervisors on site. If people had to pay for this service, even a minimal charge for example 10c per 1 minute of water, there would be fewer misuses and those charges could be used to pay for the water bills. Even though the BF criteria recommend that facilities are made available for free, it does not prohibit the operator from applying

²² Not exceeding 10 years.

a very small fee unless the latter is gaining profit (Foundation for Environmental Education, 2018). This would help in managing the beach in a sustainable way as there would be less waste in the consumption of water and the funds collected could be used to enhance the management of the beach.

Fines could also be given to those who do not abide by the rules. Thus, beach supervisors should be given more power (Micallef, 2002; Williams and Micallef, 2009; Lucrezi et al., 2015) to summon people who take dogs with them on the beach, or who litter, or those who do not abide by the Code of Conduct. Nevertheless, such management would be more effective if all the beaches were to be managed in the same way and not only those which are BF or those that are being managed by the MTA.

Conversely, the kiosks and those who rent umbrellas and deckchairs had to pay a yearly fee to the Lands Authority or the MTA (depending on the type of permit and who issued their permits). In addition, not everyone paid the same or had the same conditions. For instance, the kiosk that rents umbrellas and deckchairs in Pretty Bay paid circa 4,000 Euros a year to the Lands Authority. However, he could only put up an umbrella and a deckchair if asked by the beach users (Pretty Bay Kiosk). The Għadira kiosk 2 owner, who also rented deckchairs and umbrellas in Għadira, paid the MTA circa 14,000 Euros for an area which is 1000 sqm²³ and umbrellas and deckchairs could be put there from early morning till sunset (Għadira Kiosk 2 owner). In fact, the Pretty Bay Kiosk was complaining that it was not fair that there are other permits issued by the MTA which let them occupy the area with furniture all day long. He argued that all permits should be the same for all beaches. Once again, this shows a typical scenario where different authorities have overlapping responsibilities and they are being tackled differently, creating issues. As mentioned in Section 6.2.2, a BMU should be created and be responsible for all the things related to the beach, even for beach concessions. In this regard, all permits would fall under the same unit.

²³ Prior to 2019, they had a larger area but in August of 2019, they came to an agreement with the Minister for Tourism to reduce their area to 1000sqm after beach users were complaining that they did not have enough space to put their own things. The kiosks have now retreated inland from the sea (Arena, 2019).

Regarding NGOs, the situation was also different for each organisation, and this depended on whether that particular NGO was helping the government in managing a beach like the GAIA Foundation²⁴, or if the NGO organised activities themselves and did not have a particular beach that they were managing, such as Żibel. The GAIA Foundation had to produce a MP every year for the whole area (not only the beach) and write biannual reports on the status of the site. Regarding funds they commented:

“We get two types of funding: one from MESDC given the fact that the site is a NATURA 2000 (funds are managed by us, but we have to get approval from the ERA) and the other one from the MTA given the fact that it is a Blue Flag beach” (GAIA officer).

However, the GAIA officer explained that the funds were not enough and suggested that people should start paying a small fee to use the beach. However, if this was to be implemented, it should be applied to all beaches *“so that people do not choose the free beaches over the charged ones”* (GAIA officer).

Conversely, Żibel organised clean-up activities in different parts of the island and on different beaches. They only relied on people’s donations, although sometimes businesses sponsored them as well depending on the type of activity. The Żibel manager argued that given the number of NGOs there are, finding sponsors was difficult since the latter would have already funded a larger and more popular NGO. Also, sometimes NGOs must be careful about who to obtain funds from as the donor might influence their objectives and undermine the whole purpose of conserving the environment (Aldashev and Vallino, 2019).

Funding projects and activities to manage the beaches can be difficult, especially when there are several authorities taking care of different things but on the same beach. Hence, proper authority must be established to take care of the beach management. In such instances, it could have a fund that can help the small NGOs and, in return, the latter could help them in managing beaches. In fact NGOs,

²⁴ The GAIA Foundation is responsible for the management of Ġhajn Tuffieħa and Ramla l- Ħamra in Gozo

especially those focusing on the environment, “are becoming important actors in engaging stakeholders and making them integrate social and environmental responsibility, as well as good governance practices” (Arantes, Zou, and Che, 2020, p. 7). Given that NGOs are in regular communication with the people, they can easily understand their concerns and can act as an intermediary between the locals and the authorities (Arantes et al., 2020).

6.5.2. Availability of baseline data on which to base policymaking and design of management plans

Stakeholders were asked whether, in their opinion, the responsible authorities had the necessary baseline data and practical coastal management techniques on which to base policymaking and design of management. There was a mixture of answers as some (such as the MNHP site manager, NT Executive Director and Žibel manager) said that the authorities did not have the required data and others (such as the Associate Professor and Professor) said that if they did, they were not using it for management purposes. The subsequent question was what type of data should be collected to aid managers in their work, and the replies also varied. For instance, the Associate Academic agreed with previous researchers such as Villares, Roca, and Montori (2006), Cervantes et al. (2008), Alves, Benavente, and Ferreira (2014) and Lozoya et al. (2014) that social perception was important. In fact, he suggested that:

“Social surveys with regard to beach use and what people want and what are their expectations and whether these were satisfied [should be collected]. Surveys related to accommodating behaviour, for example, I know some retired people who go swimming early in the morning before tourists arrive in Wied iż-Żurrieq” (Associate Academic).

The Professor also suggested that authorities should engage someone to read and draw reports on dissertations and enlist what data are available. Additionally, both the MNHP site manager and the Žibel manager agreed that there should be more collaboration between the different authorities in terms of what needs to be done

and what type of data are required. The Associate Professor also suggested various data that needed to be collected, such as beach users' opinion, health and safety data, beach dynamics and profiling and type of facilities being offered, to mention a few.

According to Williams and Micallef, (2009) effective beach management depends on the data that are available. Thus, the data mentioned by the different stakeholders would be very useful to collect, so that its analysis could be used for long term MP (Micallef and Williams, 2002). Nevertheless, as explained in Chapter Three, there remains the issue of who should collect what, whether this data will be free to the public and to other authorities and NGOs, where it will be stored, whether it will be updated, who should pay for it to be collected and who should analyse it. As part of the INSPIRE Directive, Malta was obliged to share the environmental spatial data to facilitate data standardisation and its sharing (Government of Malta, 2020c). However, for some countries like Malta, this is still in its early stages and thus further research on its effectiveness is required (Crompvoets, Vancauwenberghe, Ho, Masser, and Timo De Vries, 2018). Regarding the required data, this could be established after gaps are identified as explained in the framework (Chapter Seven), and then kept in a spatial database by the same BMU to avoid duplication of work.

6.6. Coastal Area Management Programme (CAMP) Malta

As already explained in Section 3.2.2.4, CAMP Malta was a project on the coastal area management of Malta with an interest in the north-western area of the Island. Two of the stakeholders (the PA officer and the Associate Academic) that were interviewed were directly involved in this project and so their knowledge on the matter proved to be beneficial to this research in terms of understanding what really happened and what the results were.

6.6.1. Main failures

Some of the main recommendations related to beach management that were put forward by the CAMP project were to set up the Coastal Resource Advisory Board (CRAB). This was suggested as a way to facilitate the coastal management, the publishing of good practice in ICZM for Malta, studies on the carrying capacity for beach users and spatial and temporal surveys, the preparation of the coastal area management programme for the southern part of Malta, Gozo and Comino and post-CAMP project (PAP/RAC, 2005a). However, 18 years later, none of these have materialised, as further explained in this section.

Regarding the CRAB, the Associate Academic mentioned that this was a failure given the rivalry between two departments that were supposed to work together:

“During those days there were discussions to join the EPD and the PA together to form MEPA. There was some inter-departmental rivalry in which the PA wanted more control of the situation. However, the lead agency of the MAP-CAMP was under the EPD, which did not go down well with the PA. In fact, PA withdrew some of their experts in their key areas, and CRAB never happened” (Associate Academic, personal communication, April 13, 2018).

The good practice in ICZM for Malta was never published and the Post-CAMP activities were not carried out for the same reasons above. Regarding the preparation of the coastal area management programme for the southern part of Malta, Gozo, and Comino, there were no funds to do it (Associate Academic). However, the PA officer added that since the issue was coming mainly from coastal development, and the latter was the responsibility of the PA, it was decided to write:

“a coastal topic paper to enforce a common approach. In parallel, there was the Recommendation of the EU on ICZM in 2002 and by 2006 we had to inform the EU how we were implementing the recommendations. In 2010, we did an update on the same thing and the SPED was issued” (PA officer).

As explained in Section 3.3.3, this shows the high competition amongst different departments and sections, which is further enhanced due to lack of MPs (Micallef, 2002; MEPA, 2010) as well as the lack of funds. In fact, the PA officer argued that during the CAMP Malta project, even UNEP became aware of the lack of communication between the different authorities. Thus, through the CAMP project, UNEP had identified six different topics with different lead partners so as to encourage communication between the various authorities. According to PAP/METAP, (2002), this project did increase collaborations between different departments. However, as can be seen 18 years later, it is evident that such collaborations were not enough, since most of the issues that were recommended (Section 3.2.2.4) by the project are still unresolved (Section 3.3). Communication between different authorities is very important as by enhancing their knowledge, there is a higher chance that they will make better decisions during the management process (Rendle and Rodwell, 2014).

6.6.2. *Main Successes*

Even though CAMP Malta had some failures, the PA officer believed that it still produced some good outcomes:

“[The] policy framework that was used for the north-west, the testing of the SEA (Strategic Environment Assessment), an activity on beach management, an activity on systemic indicators with public participation etc.”. [In addition, this project led to the] “setting up of the Marine Protected Area along the coast covering Fomm ir-Riĥ, Għajn Tuffieħa and ir-Ramla tal-Mixquqa” (PA officer).

Finally, it was also argued that some of the results from this project, such as the detailed maps with zonations in the north-western area, were still being used to produce the MPs (ERA officer).

6.7. Public involvement as perceived by the stakeholders

As mentioned in Section 2.2.4, public participation is deemed to be very important, as managers can learn about the users' behaviour and preferences (the linking of one variable over another). This will in turn often lead to effective beach management (Ariza, Jiménez, et al., 2008; Ariza et al., 2014; Lozoya et al., 2014; Prati et al., 2016). Chapter Five evaluated the data collected on such behaviour directly from the beach users. This section will build on this by investigating stakeholders' perceptions of public involvement, where perception is defined as the understanding or interpretation of the argument.

6.7.1. *Public awareness of management decisions*

Stakeholders were asked whether in their opinion they think that beach users and the general public were aware of management decisions that were taken by the authorities. Not all the stakeholders agreed on the answer, as there were some mixed replies depending on their role.

According to most of the stakeholders (such as the Associate Academic, the Associate Professor, the CMD, the ERA and Health officers, and the Biržebbuga LC), the public should be aware of the management decisions as there were many signs and codes at each entrance to the beach, educational campaigns in schools and on social media, education activities on the beach, newsletters and public consultations on MPs by various authorities. However, as shown from the results obtained from the beach users' questionnaires (Sections 5.4.1 and 5.4.2), it appeared that not all the beach users knew about certain decisions, such as no barbeques, even though there were signs. This shows that either awareness and education did not reach the public as it should, or else the beach users were not interested in reading the information available, and so a different kind of approach needs to be adopted to increase public awareness (Lucrezi et al., 2015).

Conversely, the PA officer, the NT Executive Director and the MNHP site manager agreed that, in their opinion, the public is not informed about beach management

decisions. The NT Executive Director stated that Malta is still behind other countries when it comes to public awareness for the following reasons:

“1) people resist and don’t care, 2) [The] political sphere does not take the actual decisions as they are afraid they will lose votes, and 3) sometimes we impose something on people, but the infrastructure is not yet in place. For example, control barbeques and no alternatives exist or offered” (NT Executive Director).

Given that sometimes it is difficult to find the right information at the right time, this research suggests that more awareness/publicity should be made available on social media such as Facebook, and also as adverts on TV and radio. Additionally, another suggestion by the Professor to improve awareness was to develop a mobile application, listing/outlining all the things that one can and cannot do in that particular location.

With regard to who should be responsible to create awareness, some of the stakeholders (such as the Associate Professor, NT Executive Director, the ERA and the GAIA officer) agreed that the MTA and beach supervisors together with the LC of that particular beach, should be responsible. However, in such cases, it would leave out the other beaches which are not being managed. Whereas the MNHP site manager distinguished between the roles of top management and middle management, the site manager suggested that the ERA and MECP should be responsible for raising awareness, given that they were responsible for the environment. Both authorities can *“do educational campaigns, write-ups in newspapers, or using the media for promotional campaigns”* (MNHP site manager). He added that then there are NGOs (like his organisation) where they could *“inform the public by putting up panels and notice boards on site where we explain what we are doing and for what reason”* (MNHP site manager). As mentioned in Section 6.5.1, NGOs play an important part in raising awareness as they work directly with the public and so they would know how to approach them (Arantes et al., 2020). The PA officer added that the public needed to understand what would happen if they were to lose the beach resource, such as loss in the economy and recreational space, and how this would affect them.

In summary, it seems that even though government authorities are raising awareness through various mediums, the level of knowledge amongst the public is still not enough. Poor and/or lack of public awareness can hinder the effectiveness of beach management (Williams and Micallef, 2009; Cabezas-Rabadán, Rodilla, Pardo-Pascual, and Herrera-Racionero, 2019). This means that the stakeholders have to find alternative sources on how to make people aware of things. Additionally, both the authorities and stakeholders have to be transparent in what they are doing and explain why certain things were taken on board and others were discarded. This will help people feel more involved and able to participate in management decisions as well (Section 6.7.2) (Lozoya et al., 2014; Cabezas-Rabadán et al., 2019).

6.7.2. Public participation in management decisions

As discussed in Section 6.7.1, most of the stakeholders agreed that the public should be aware of management decisions, and they were committed to creating awareness. However, when they were asked to involve the public in management decisions, there were various discussions and disagreements.

Nearly all of the stakeholders (such as the MTA beach manager, MNHP site manager, Žibel manager, and the CMD officer) argued that although public participation is important, the latter should only be considered up to a certain limit. They also explained that feedback should be collected from all the relevant stakeholders and the public, but then experts should take the decision based on their recommendations. The MTA beach manager argued that sometimes it was difficult to make decisions when the stakeholders were involved as there would be more conflicts than problem-solving. As explained by Soriani et al. (2015, p. 144), “if improperly managed, stakeholder's participation can create new conflicts or escalate existing ones”.

Conversely, the experts (the Associate Professor, the Associate Academic and one of the NGOs (NT Executive Director) argued that it was very important to include all the public and stakeholders from the beginning, and participation should be taken seriously by the managers. Uittenbroek et al. (2019) argue how involving the public

from the early stages can influence the management decisions through their experience and local expertise. If people are not consulted beforehand regarding any management decisions, then there might be a higher possibility that they will resist the change (Micallef, 2002; Marzuki, 2015; Chen et al.2017). The Associate Academic also highlighted the importance of advertising any consultations, not only in the government gazette or on the authority's website, but also on other means such as social media. He argued that:

"If public participation is to be taken seriously, the authority concerned should look for participants and be ready to have conflicts with them if they do not agree with such proposals, not only choose easily targeted audiences" (Associate Academic).

Public participation is not easy, as managers must decide when to seek such involvement; whether at the planning stages, during the decision process or at the end after the decision has been taken. However, if the latter is the case, then the managers must be flexible and ready to amend their decisions if in the common interest, even after a decision has been taken (Marzuki, 2015; Uittenbroek et al., 2019).

From the interviews that were carried out with the owners of the kiosks, it appeared that contrary to what the managers said, not everyone was consulted during management decisions, even though they all showed an interest in being involved. A case in point was the proposal for the extension of Għadira Bay. Both of the kiosks showed their frustration that none of the top management (such as the MTA, the ERA or the Ministry of Tourism) consulted them or at least informed them about the proposal, even though they worked there. In fact, when plans to extend the Għadira beach came through in 2018, they only learned this from the Planning Application document that was attached to a pole on the bay. Għadira Kiosk 2 owner argued that:

"people who work on this beach and give their contribution should be consulted on what is happening, not find out on the news. We can help them a lot as we are here daily and talk to the beach users" (Għadira Kiosk 2 owner).

Only the Għajn Tuffieħa Kiosk owner claimed that they were consulted by both the MTA and the GAIA Foundation when they wanted to change something. This could be because this was the only kiosk found on the beach and some amenities that were required as part of the BF beach, such as the lavatory facilities, were located within the kiosk, thus they had to involve them as the kiosk owned the facilities. Further to this, given the low accessibility to the beach, the kiosk also helped them by letting them use the lift to carry the garbage bags to the top of the headland. Thus, both the MTA and the GAIA needed cooperation with this kiosk. Nevertheless, the kiosk owner still admitted that he would have liked to be more involved in the management of the beach, especially with regard to its cleaning.

There seems to be an agreement that the public should be consulted from the early stages of discussion on management decisions. However, these opinions then need to be validated and represented (Lozoya et al., 2014). Some of the stakeholders claimed they did not have the time and/or funds to consult with the public, or they were afraid that there would be no compromise, thus they decided to ignore the consultation. According to Marzuki (2015, p. 23), this is not considered proper public consultation because “an involvement can only be considered appropriate when the public is allowed to participate actively in the planning process”. Conversely, there are other stakeholders who do consult with the public, but their decisions would then not reflect the public’s comments. As the Żibel manager suggested, it is important to inform the people why their recommendations were not taken on board (if that is the case), to show them that their suggestions were not in vain but were part of the discussion process. In this case, the process would be more transparent, and the public would be more willing to take part in subsequent consultations (Marzuki, 2015). In such cases, as mentioned in Sections 6.2.2, and 6.3.4, a LPC would be the first step to involve the public.

6.7.3. *Complaints*

All the relevant stakeholders were asked whether people complain to them, and if so, what type of complaints they receive and how they tackle them. The main complaints are outlined below.

6.7.3.1. Litter

As shown in Section 5.4.2, people complained mostly about the amount of litter that is left on the beach and the lack of bins provided. The authority responsible for the cleaning up of beaches and the provision of the bins is the Beach Cleansing Unit within CMD. The CMD officer stated that they try their best to keep the beaches tidy, especially those that are BF. The CMD provides different types of bins for recycling purposes (coloured bins), black bins for the non-recycling waste, and also charcoal bins, but people still dispose of waste incorrectly. As explained by the CMD officer, there are several instances where people dispose of normal waste in the charcoal bin, which ends up catching fire (Figure 6.7). Additionally, some of the beach users do not recycle in the bins provided; or if the bins are full, instead of taking the waste home, they just leave it there (Figure 6.4). The CMD also have an application where the public can report any litter and damages and they fix it immediately. Nevertheless, he argued that people were never happy, and they complained about things that were not true, such as that the bins had not been emptied in 30 days, which he stated was impossible.

Even though it is correct that the Beach Cleansing Unit do their best, there are still areas for improvement. For example, people complained that beaches were dirty during the evening, because beaches and bins were only cleaned and emptied in the morning. During the day there are many visitors who, unfortunately, do not dispose of litter in bins or else if they do, they find them full (Figure 6.4). Thus, it would be ideal if the bins were emptied twice a day rather than once a day. Obviously, this would require extra money and workers, which could be a problem if the budget is not enough. Another alternative would be to entrust the evening cleaning to an NGO. In fact, the Žibel manager suggested that if a small amount of money was given to their organisation, they could take care of collecting such rubbish themselves. In addition, more education is needed to teach beach users the benefits of disposing of waste in the correct bins. Also, there should be an increase in monitoring and enforcement and harsh penalties should be given to those who do not abide by the regulations (Micallef, 2002; Lucrezi et al., 2015).



Figure 6.4: This photo shows one of the litter bins on the beach of Ghadira during the weekend in the evening. (Source: Author, July 2019)

Apart from the bins, there was also the problem of cigarette butts that were left in the sand. The MTA does a lot of campaigning against this and also distributes cone ashtrays and ashtray pots at each entrance to the beach that is managed by them (Figure 6.5) (Dingli, 2019). In addition, the Beach Cleansing Unit also sift the sand. However, this seems to be insufficient, as cigarette butts are still found in the sand. In addition, these ashtrays are not compulsory and if either the supervisor does not hand one to each smoker, or the person who smokes does not take one voluntarily prior to entering the beach, there is no point. It would be ideal if the beach supervisors had legal powers to fine anyone disposing of butts in the sand (Lucrezi et al., 2015). Regarding the litter, this would require constant monitoring both during and after the BF beach hours, as many people visit the beach in the evening. In

addition, this problem is only being tackled in the MTA or privately managed beaches, the others are left full of butts. Lucrezi et al. (2015) suggest the idea of interactive education, which would promote recycling and reduction in waste. The Žibel manager also proposed to have a big empty jar in the middle of the beach in which all the cigarette butts are collected, so that people can actually see the amount and make them realise that if people are not responsible, all those butts would end up in the sand.



Figure 6.5 Cigarette ashtrays. (Source: Dingli, 2019)

6.7.3.2. Permits from certain activities

Even though the LCs do not have any say on the management of beaches, some localities still have by-laws such as no barbeques and camping and/or other activities such as parties or beach volley, which require a permit. Given that every beach and LC have different by-laws or none at all, it may become confusing for the public to know what they have to do or whom to contact for such a permit. For example, in Golden Bay, given that it is a NATURA 2000, a request for an activity to take place on the beach requires three different permits, from the LC, the ERA and the Majjistral Park. As there are no clear instructions and no consistency regarding what one is supposed to do, as well as a lack of monitoring and enforcement, the result is that people do whatever they like (Lucrezi et al., 2015).

For example, in Għadira, one has to apply for a permit with the LC and pay a fee to have a barbeque in a designated area (Figure 6.6). However, there were no clear signs to inform beach users that barbeques are only allowed in designated areas with a LC permit, nor do they give the website or the location of where to find the LC. Few people read signs, as seen in Section 6.7.2, so alternative ways to make this known should be found, such as short clips on social media, and then such activity should be enforced. Camping is also not allowed on the beach, but according to the Għadira Kiosk 2 owner, it still happens. He has found people camping near his kiosk who left when they saw him. As mentioned previously, this shows a lack of monitoring and enforcement. In fact, when the owner of the kiosk was asked whether he reported them, he replied that as long as they did not damage his property, he did not see the point. Such cases show that BF management is only effective while there are the supervisors in place until 6 pm; after this the beach is left without any monitoring or enforcement.

Similar to Għadira, in Ġnejna Bay, even though there were signs of what one is supposed to do, it did not mention that people have to apply for a permit from the LC to use barbeques, or where to contact the LC (Figure 6.7). This leaves people free to interpret the signs however they want. In fact, while conducting the beach users' questionnaires, there were people who admitted to having barbeques even though they knew they should not. Ġnejna is not managed by the MTA but it falls under the Mġarr LC jurisdiction. Given that it is not a BF beach, monitoring and enforcement seem to be even scarcer (Figure 6.8). This shows that there is the need for a BMU, not only to manage all the beaches, but also to be responsible for all the permits that are required. Through its own Monitoring and Enforcement section it can provide more effective management (Chapter Seven). Additionally, signs should be standardised and clear (including contact information) for all beaches to make it easier for the beach users to interpret them.



Figure 6.6: shows two different signs at Għadira Beach. The photo on the left states that one needs a permit from the LC and also shows the barbeque area, whereas the photo on the right shows that no barbeques are allowed. (Source: Author, 2018)



Figure 6.7: a) shows the signs in Gnejna Bay, b) shows the remnants of barbeques which were thrown on the beach rather than in the charcoal bin. (Source: Author, 2018)



Figure 6.8: shows the other illegalities that one is supposed to avoid as per the signage above: no parking on sand, no caravans and no tents. (Source: Author, 2018)

The lack of enforcement is also linked to the fact that the management approach is fragmented amongst different key players. This leads to multiple issues, such as lack of clarity of roles and knowing who is supposed to do what, and lack of communication between the responsible authorities (Micallef, 2002; Shipman and Stojanovic, 2007; Ariza, Sardá, et al., 2008). This is clearly shown in an article in the *Times of Malta* newspaper, where people were complaining about the number of caravans parked on the road near Little Armier²⁵, as well as the numerous tents and gazebos on the sandy beach which are usually left there for days (Figure 6.9). When the newspaper contacted the LC, they said that as long as the campers are parked within a parking space and do not create a nuisance then they are allowed to stay. In addition, a spokesman from the MTA said that given the fact that “campers were parked long-term on the road adjacent to the sandy beach [they] were not under their jurisdiction, but that of the police. [In addition, though the MTA officers inspect the beach daily] tents being set up on the sandy beach also fell under the police” (Times of Malta, 2019b). Thus, in Little Armier, there were three authorities who were supposed to be managing, monitoring and enforcing the beaches, but none of them were doing anything apart from blaming the others for being responsible.

²⁵ Sandy beach in Mellieħa



'No tents. No Camping. No Caravans. No Campers' - but people are ignoring the signs at Little Armier

Figure 6.9: The tents and gazebos at Little Armier. (Source: Times of Malta, 2019b)

6.7.3.3. Amount of seagrass

As illustrated in Section 5.4.2, only a few beach users thought that the seagrass was an issue for the Maltese beaches, which is very similar to the results that were obtained by Cabezas-Rabadán et al. (2019), which demonstrated that people were not concerned about the seagrass residues. However, according to the kiosk owners, many people complained about the amount of seagrass residue on the beach during winter as, in their opinion, this made the beaches look dirty. As of July 2017, the ERA issued the Operating Procedures on Beach Cleaning guidelines where it provided guidelines, on the “removal of waste and litter from the beaches and removal of *Posidonia oceanica* wrack accumulations” (Environment and Resources Authority, 2017, p. 2). In addition, it prohibited any removal of seagrass between 1st October and 14th April, when previously this was being removed from January. Given the new ERA procedures, the CMD officer argued that they did not have enough time to remove all the seagrass residues from the beaches before the bathing season started. This resulted in certain beaches being left with the seagrass residue for a longer

period of time. In fact, the Mġarr Kiosk owner stated that they had to inform the authorities several times to come and clean it, but to no avail, resulting in unpleasant odours and more insects, which according to the kiosk owner led to fewer visitors.

When the kiosk owners were informed by the researcher about the operating procedure, they replied that they did not know about it (even though this can be found online). Additionally, the Għadira Kiosk 1 owner complained that, when compared to the previous year, the beach was smaller due to the residue staying for longer periods. This is another case where the stakeholders were most likely not involved or informed on these procedures. From their replies, it was understood that they do not know the advantages of keeping the seagrass residue for longer. That is probably one of the main reasons why they were opposing the guidelines. As mentioned in Sections 2.2.4 and 6.7.2, when the public and stakeholders are not involved in the management decision from the beginning, they tend to oppose any change even if it is for their own good. Additionally, management decisions should be more transparent (Micallef, 2002; Lozoya et al., 2014).

6.7.3.4. Parking problems

As seen in Section 5.2.3, it is very hard for the locals to use public transport, either because they are too lazy to use such services (cultural attitude) or else because they are not reliable, so people prefer using their own car (Attard, 2012; Mifsud et al., 2017). In order for the beach users to start using public transport, there should be educational campaigns as well as some type of incentive, such as free or reduced tickets for buses. There could also be measures put in place to discourage people from driving by charging high prices for parking even in the streets (Mifsud et al., 2017).

6.7.3.5. Other complaints

In 2018, the MTA installed nine sets of showers on seven different beaches that were being managed by the same authority. Mobile lavatory facilities were also added to the current infrastructure. Nevertheless, people still complained that these were not

enough. In addition, on those beaches that did not get such facilities, people were complaining that the current infrastructure was not enough for the number of visitors staying at the beach. A case in point is Ġnejna, where there are no showers and only two lavatories, one for men and one for women. Both the kiosk owner and the beach users were complaining that these were only cleaned in the morning, ending up dirty by the end of the day. This beach is not given any importance because it is not being managed and it is not a BF beach. To manage the beaches in a sustainable way, a beach manager should be allocated to each beach and report any damage or issues to the responsible authority, even if that particular beach is not a BF (Chapter Seven).

Beach users also complained about the location of deckchairs and sunbeds (Section 5.4.2). They complained that there was not enough space for them to stay on the beach without having to rent an umbrella and a deckchair. This problem was found on those beaches where there are operators who have permission to set up their deckchairs and umbrellas from early in the morning, such as in Għadira. This has been an issue for a long time and was even mentioned in the final document by CAMP Malta (UNEP/MAP, 2003a). After several complaints, on 7 August 2019, the then Minister for Tourism announced that they had reached an agreement with the Għadira operators to reduce their space by circa 344 m² each (Arena, 2019). Although this was accepted by many bathers, others still complained that other beaches should follow the same example.

Finally, the stakeholders were asked how they would tackle the situation when a complaint is filed with them. Some of the stakeholders explained that if the problem could not be mitigated, such as the removal of seagrass residues, they would try to explain to the persons who were complaining why it is important to leave it there. Others, such as NGOs, stated that they would take the matter in their own hands and take the complaint to the relevant authority. If needs be, they would go there and clean it themselves.

6.8. Main issues being faced by Maltese beaches and priorities as perceived by the stakeholders

Different stakeholders that were interviewed mentioned the various matters that, according to them, were perceived as being the main issues that Maltese beaches were facing.

6.8.1. *Different type of beach management*

This research identified three categories of beaches in the Maltese Islands: those that are BF beaches, other beaches that are being managed by the MTA or other authorities, and those which are not being managed at all. As explained in Section 6.3.2, the BF beaches are considered a priority in terms of cleansing and maintenance. Beaches can get on-the-spot checks and, if something is not in order, they might lose the award. However, this is done at the expense of the other beaches, with the BF beaches ending up offering better services and “often considered as environmental sustainability references, [thus] they have privileged positions in the market for sun and beach” (Roig-Munar et al., 2018, p. 556).

Ġnejna beach was one of those beaches that was not being managed by anyone, although it fell under the jurisdiction of the LC. The Ġnejna kiosk complained that since the beach was not a BF, it was not given the importance that the other adjacent beaches, such as Ġhajn Tuffieħa and Golden Bay, were given. As a result, there was rubbish everywhere and electricity poles were rusted. They had been reporting the issue to the LC for years, but they said that nothing had happened in response.

6.8.2. *Fragmented approach*

As has been stated both in Sections 3.3.1 and 6.2.2, in Malta there is no one single authority that is currently taking care of the beaches; this responsibility is fragmented amongst various departments, government authorities and NGOs (Micallef, 2002; PAP/RAC, 2005a). In addition to this, there is no government policy on beaches,

although very recently the then Minister for Tourism mentioned that by the summer of 2020 there would be a beach policy in place (Arena, 2019). Nevertheless, when a representative from the MTA was contacted to see the policy's current status, they did not know about it and information was still pending at the time of writing.

If the beach policy occurs, the responsible authority/unit must see that it 1) takes an integrated approach (Lucrezi et al., 2016), 2) creates one body that is responsible for the management of beaches, 3) manages all beaches, not only those that are BF, and 4) understands the beach users and stakeholders' perceptions and attitudes (Botero, Anfuso, Williams, and Palacios, 2013; Chen et al., 2017). This thesis is in a prime position to aid with the development of this policy and will look into ways to seek an opportunity for collaboration with the MTA.

6.8.3. *Lack of cooperation*

From the literature review and the semi-structured interviews, it is evident that the current cooperation amongst the different governmental authorities, NGOs and other stakeholders is not enough. There is regular contact between the main authorities such as the MTA and the CMD with regard to the BF beaches. But it seems that cooperation between the LCs and the EHD is lacking. In fact, the Health officer argued that the LCs complained that they were not taking enough water samples to test the water quality and they wanted more monitoring, but they were not prepared to pay for the service. In addition, NGOs were sometimes not recognised for the important role they play. Žibel, for instance, stated that they would be happy to be more involved with the government authorities.

As highlighted in Section 6.7.3.2, there is a lack of monitoring and enforcement, because the authorities involved do not know what they should be doing and who is responsible for what. This is exacerbated by a lack of financial resources (Planning Authority, 2002; Nava Fuentes, Arenas Granados, and Martins, 2017). Given that there are many authorities involved in the management of beaches, roles can easily overlap, especially when there is a lack of communication (Ariza, Sardá, et al., 2008).

A lack of cooperation exists when it comes to data collection and distribution. Sometimes it is very difficult to obtain data from a department, even though it should be public. The department will argue that, since they collected it, it belongs to them. As mentioned in Chapter Three, there should be a common database where data can be stored and shared easily. This would not only create harmonisation, but it would decrease duplication of data, hence the duplication of work (PAP/RAC, 2005).

6.8.4. *Lack of public participation*

Most of the management decisions are taken in a top-down approach, even though in some cases there have been public consultations (Zammit Pace et al., 2017). This research has identified three problems with the management decisions as they currently exist, namely (Marzuki, 2015):

1. The public is not involved from the beginning of the discussions, so most of the decisions are made without consulting them. The public are only 'consulted' to inform them of the decisions, or
2. The public have been involved in previous projects; however, their opinion has not been taken on board and a valid justification for this has not been presented to them. Thus, the public concludes that they are attending such meetings in vain, as the top management is still making the final decision, or
3. Decisions are taken without even consulting the relevant stakeholders that would be affected, as according to the top management this is for the best interest of the public. Such a case, for example was the project to extend the Għadira beach. The kiosk who operates there every day of the year was not informed of such a project but learned of it from the news and from the Planning Application that was fixed to a pole on the beach.

6.8.5. *Coastal erosion*

Coastal erosion is a serious issue and given that the Maltese beaches only amount to 1.9% of the total coastline (Zammit Pace et al., 2019) they must be managed in a

sustainable way to preserve them as much as possible. Currently, the government is investing hundreds of thousands of Euros in the replenishment of beaches to increase the tourism product (Figure 6.10). The PA officer argued that:

“one of the policies of the Structure Plan stated that beach replenishment should only be done on beaches where erosion is approved. However, the pressure is always the same, that we need to increase beaches for tourism” (PA officer).



Figure 6.10: To increase the tourist product slogan for the regeneration of beaches. (Source: Author, 2019)

However, it is difficult to understand which beaches are being eroded, given that there are few studies apart from dissertations or reports such as Spiteri (1990) and Farrugia (2008, 2017) involving specific case studies. In 2018, there was a pilot study of Balluta Bay where the beach was replenished. However, after seven months this disappeared following a winter storm (Camilleri, 2019). Previous studies by Pace (2009) had indicated that unless a breakwater was built the sand was not going to hold due to the wave refraction, especially when there is a north-easterly wind. Nevertheless, according to the Ministry for Tourism, this project was a success and in the following year (2019) it was announced that the beach would be replenished by the adjacent hotel (Hotel Meridien) for the following five years (Times of Malta,

2019a). In fact, in 2019, apart from Balluta Bay, three other beaches in the south of Malta, Għar l'Ahmar in Marsaxlokk, St. George's Bay in Birżebbuġa and Il-Fajtata in Marsascala, were replenished (Times of Malta, 2019a). In all three cases no Environmental Impact Assessments (EIA) were carried out, but only separate studies such as hydrodynamics. To determine the failure or success of such projects one has to wait for the monitoring reports. However, since no studies were carried out on the surrounding land, it might be too late then to reduce coastal erosion.

6.9. Summary

As described in Section 6.1, the aim of this chapter was to assess stakeholders' attitudes and aspirations towards beach management. As outlined by Ariza et al. (2014), involving the stakeholders' perspective is one of the vital principles of coastal management. This is because a holistic and integrated approach requires the gathering of different perspectives. Even though this can be time-consuming and costly, the stakeholders can share their experience and knowledge to improve the effectiveness of beach management (Lozoya et al., 2014; Soriani et al., 2015; Prati et al., 2016).

One of the main conclusions of this Chapter is that even though the BF Award is currently the main management tool for beaches, the award alone is not enough. As explained by Ariza, Sardá, et al. (2008); Lucrezi et al. (2015); Klein and Dodds (2018); and Zielinski and Botero (2019) the BF can only be used as part of a management tool but not on its own as it only considers certain aspects of beach management (Section 6.3.2).

Secondly, given the lack of a single authority which is responsible for all the beaches, these are not being managed in a uniform way. In fact, BF beaches take priority over those which are not being managed, which sometimes leads to the degradation of the latter. Additionally, the lack of monitoring and enforcement results in illegal activities such as barbeques or camping. In this regard proper enforcement is required and officers should have the power to penalise those who did wrong

(Lucrezi et al., 2015). This research therefore advocates the formation of a specific BMU that will be responsible for the management of all the beaches (MEPA, 2010; Planning Authority, 2002) (Chapter Seven). This unit will be in charge of developing MPs for each beach since each one is unique and attracts different types of users (Zielinski and Botero, 2019).

Furthermore, even though there seems to be effective communication within the same level of government, such as the MTA and the CMD, this is not the same between other bodies which are not in a management position, such as the NGOs or the kiosk owners. In this regard, this research also recommends setting up the IGC and LPC so that communication and participation can be both vertical and horizontal (Micallef, 2002; Lozoya et al., 2014).

This Chapter comprised the opinion of the different stakeholders on various issues such as the beach management in the Maltese Islands, the BF Award, and the main issues that beaches are facing. With regard to Chapter Seven, this will discuss the step-by-step framework and will recommend best practices for the Maltese beaches which can also be used by other SISs, by including the results obtained from Chapter Five and Six.

Part Three: Recommendations and conclusions

Chapter Seven: Designing a framework for sustainable beach management in the Maltese Islands and Small Island States

7.1. Introduction

Objective Five of this thesis was to develop a framework for sustainable beach management in the Maltese Islands which could also be used in other SISs. This Chapter therefore draws on the issues, results and possible solutions that have been explored and analysed in Chapters Five and Six, to integrate these into a sustainable framework that can be taken forward. This Chapter will discuss the recommendations for such a framework and the step-by-step process of how it could be implemented to improve beach management in the Maltese Islands and similar SISs.

7.2. Recommended beach management framework for Maltese beaches

This section provides recommendations for the development of a sustainable beach management framework. Such a model is based on both information collected through the literature reviews (Chapters Two and Three) as well as from the data that were collected through the questionnaires and semi-structured interviews (Chapters Five and Six). From the results obtained, it is evident that the Maltese Islands lack an integrated and sustainable management approach, as the management of beaches is fragmented between multiple authorities. This currently leads to a lack of communication between key authorities, unclear responsibilities and duplication of work (Micallef, 2002; UNEP/MAP, 2003; Shipman and Stojanovic, 2007; Sardá et al., 2015). This was evidenced by results obtained both from the questionnaires (Section 5.3.5) and the interviews (Section 6.2.2) which showed that people across Malta are confused about who is responsible for the beaches and frustrated that they do not have a clear point of contact to report issues.

As outlined, the main management tool being used on some of the Maltese beaches is the BF during the summer season only. One of the BF weaknesses is that beach managers tend to use it to favour tourists rather than to conserve the environment as the former generate economic benefits (Lucrezi et al., 2015; Klein and Dodds, 2018). However, studies have shown that tourists do not choose a beach because it

is a BF (McKenna et al., 2011). Similar results were obtained during the beach users' questionnaires, where most of the respondents did not know what a BF beach was, even though two of the case studies were BF. Therefore, as explained in Section 6.3.2, the BF tool should be added to other management tools, such as the physical characteristics of the beach and the perceptions and attitudes of beach users and stakeholders, as Ariza, Sardá, et al. (2008); Lucrezi et al. (2015); Klein and Dodds, (2018) and Zielinski and Botero (2019) have all previously stated.

As already stated in Chapters One and Two, some of the works on beaches such as the strategic management (Micallef and Williams, 2002) and the BARE model (Williams and Micallef, 2009) provided the theoretical bases on which this research could build. Thus, this model can be considered as an improvement, extension and upgrade to their studies, especially since these were carried out prior any beach management was in place in Malta. This model also includes the beach users and stakeholders' views and perspectives on management decisions. Thus, this model aims to provide an integrated and sustainable approach towards beach management, including the involvement of the public and stakeholders' opinions. Figure 7.1 demonstrates a step-by-step approach to achieving an effective beach management model.

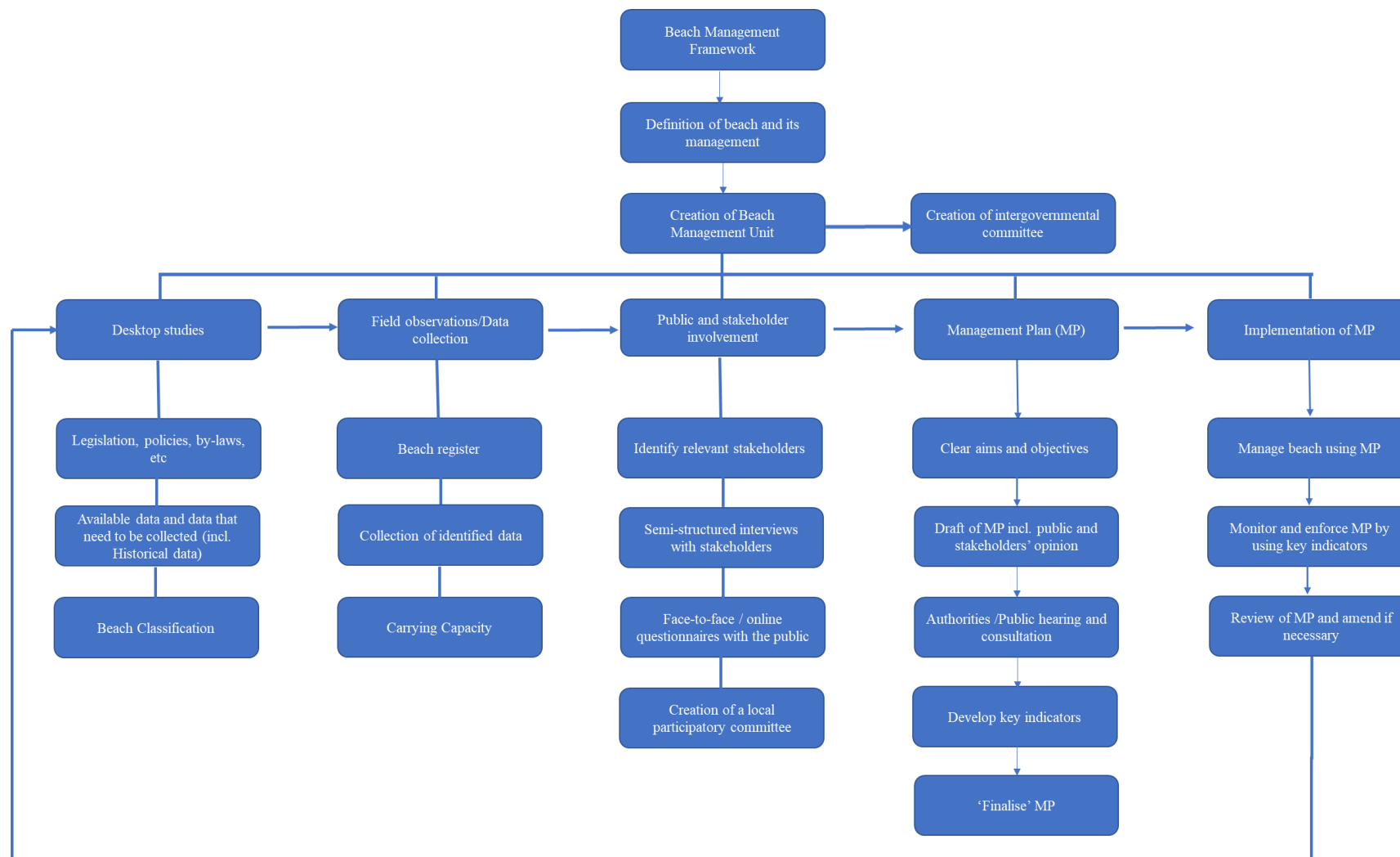


Figure 7.1: A step-by-step beach management model for the Maltese Islands.

7.2.1. *Defining beaches and their management*

For the framework to be effective, the terms beach and beach management should be defined clearly to establish the parameters that the model will evaluate. Regarding the term beach, the model must:

- define what is considered as a beach (for example, based on the varying material),
- identify the number of beaches present on the island,
- distinguish and choose between the various types of beach classifications (Botero and Hurtado, 2009; Williams and Micallef, 2009; Zammit Pace et al., 2019) (Section 3.2.5.2) given that different beaches attract diverse users (Zielinski and Botero, 2019),
- specify the exact boundaries both offshore and inshore including access (Micallef, 2003a). This may also change according to the type of beach classification and weather, and
- define specific terminologies such as erosion, deposition, degradation, and marine and terrestrial nourishment.

Once the terminology of a beach has been established, specifications on how to manage it should be included. For instance, it should be specified what is going to be managed, such as the physical, anthropogenic (James, 2000a; Phillips and Jones, 2006) and the parts related to the economic value of the beach, or taking an integrated approach that incorporates all three (Lucrezi et al., 2016). Additionally, the extent to which the management of the beach should take place must also be established to exclude any misinterpretations further down the model. Such terminologies and beach identifications should be included in a beach policy and available to everyone. A policy framework is required for effective beach management as it “serves to direct future decision making, acts as a general guide to action and enables coordinated planning and management” (James, 2000b, p. 150).

7.2.2. Creation of a Beach Management Unit

Once the beach policy has been finalised, the government should establish the BMU for Malta who will be responsible for all the beaches and their management. As mentioned in Section 3.3.1 and Figure 3.5, in Malta beach management responsibilities are fragmented amongst different government authorities and NGOs (Micallef, 2002; MEPA, 2010; Zammit Pace et al., 2017). This is similar to other cases such as: the Catalan coast, where “beach management is typically included in departments in charge of environmental issues, municipal services, urban planning, tourism, and governance or public works” (Ariza et al., 2012, p. 451) and in Italy, where fragmented bodies led to conflicts and lack of a coordinated approach (Prati et al., 2016). Figure 7.2 suggests how the technical part of the BMU would be structured.

Additionally, as previously mentioned by Micallef (2002) and Lozoya et al. (2014) and in Sections 6.2.2 and 6.3.4, an IGC would also need to be established. This committee should be composed of all the relevant authorities and NGOs that are directly involved in the management of beaches, such as the BMU, TM, Lands Authority, the PA, the ERA, the MTA, the EHD, the CMD, the LCs, NT and the GAIA Foundation. The purpose of such a committee would be to discuss their roles in the management of beaches, any data that are being collected by the relevant authorities and any related issues/comments/recommendations about the MP. This would enhance communication among different sectors and avoid duplication of work (Shipman and Stojanovic, 2007; Sardá et al., 2015; Prati et al., 2016). The IGC would need to meet every two months to discuss related matters.

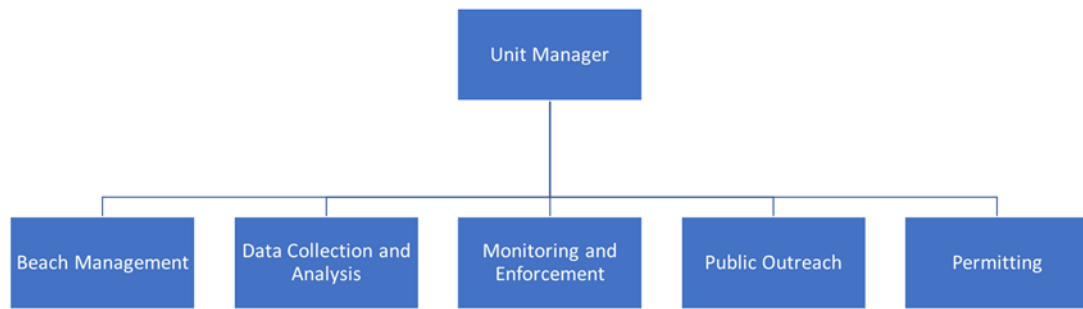


Figure 7.2: Shows the BMU organigram chart

The sections specified in Figure 7.2 are explained below:

- a. Unit Manager – This person would be responsible for all the Maltese beaches and their MPs. He/she must see to it that the officers under their remit are adhering to their roles. In addition, they would also be responsible for convening the IGC at least every two months to discuss any issues or recommendations.
- b. Beach Management – This section would be responsible for the actual management of the beaches. This should be comprised of:
 - i. Six²⁶ full-time beach managers that:
 - Would be responsible for all the beaches for the whole year. During the bathing season they would oversee the beach supervisors and lifeguards to ensure they are doing their job, whereas during the rest of the year they would also be responsible for the beaches' maintenance in the absence of the supervisors,
 - Should be qualified in an environmental subject (Lucrezi et al., 2015),
 - Have the ability to enforce the law by giving fines (Lucrezi et al., 2015),
 - And also report any illegalities to the Monitoring and Enforcement section,
 - Write monthly reports about the beaches,

²⁶ Four supervisors for Malta and two for Gozo

- Filling the beach register (as modified in this thesis) every season,
 - Provide and collect any feedback from the other sections to write/review the MPs,
- i. Summer Supervisors – Their main role would be to oversee that the-day-to-day responsibilities, according to the MP, are being adhered to during the bathing season. Each beach must have at least two summer supervisors depending on the size and extent of the beach, to monitor the beach 24/7. A daily report should be compiled for each beach including information such as the number of beach users, any accidents and complaints. Such reports would then be passed on to the Data Collection and Analysis Section for further analysis. The supervisors should also have the legal power to give small fines for contraventions of the rules, such as having dogs and barbeques on the beach where these are not allowed. However, any infringement should also be reported to the Monitoring and Enforcement section.
 - ii. Summer Lifeguards – These would be responsible for the health and safety of the beach users and so should be qualified in first aid. The number of lifeguards on each beach depends on its size. They should be positioned where there is clear visibility and the whole beach can be easily accessible. They should also be easily visible to and accessible by the public (Foundation for Environmental Education, 2018).
- c. Data Collection and Analysis Section – Officers within the section would be responsible for identifying, collecting and analysing any data which would be beneficial to include in the compilation and subsequent implementation of the MPs. Such data (such as the bathing water quality) could be already available from other authorities, or it may need to be collected by the section as it would be either outdated or not available. All the data collected should be standardised, updated frequently and put into a spatial database to be held by the BMU and used for management purposes.

- d. Monitoring and Enforcement – Officers should be responsible for the monitoring and enforcement of the MPs and regulations. Apart from the officers who will be dealing directly with this section, both the beach managers and summer supervisors would also have the power to enforce the law to help the Monitoring and Enforcement Officers given that they would know their beaches inside out and are more approachable as they work on them all the time, especially during summer. This section should be operable throughout the whole year.
- e. Public Outreach – This section would be in charge of educating the beach users and the public in general about the results obtained from the MPs through activities, social media and also interacting face-to-face to raise environmental awareness. The languages to be used for such dissemination should be Maltese, English, Italian, French and German. This section would also be responsible for collecting beach users' perspectives through face-to-face questionnaires and semi-structured interviews with the relevant stakeholders such as kiosks, NGOs and government entities who are involved both directly and indirectly in beach management. The officers would also be responsible for convening the LPC at least once a month during the summer bathing season and bi-monthly during the rest of the year and any relevant information would be passed to the 'Data Collection and Analysis' Section for analysis. Eventually, such results would be reflected in the MPs, compiled and aggregated at least annually and comparisons made to previous years.
- f. Permitting – This section would be responsible for any permits (including barbeques and activities) and/or concessions that are required on all the beaches. In this regard, both the beach users and the stakeholders would know the procedure and they can contact one single authority, making it easier.

The BMU should be part of the Government structure and as such should be financed through government funds, like other departments and units. After the BMU has been established, the next step would be to run through the different steps of the framework: Desktop studies, Field observations/Data collection, Public and stakeholder involvement, MP and Implementation of the MP, as discussed in

Sections 7.2.3– 7.2.7 below. It is to be noted that this part of the framework should be run for each beach, since each one has different characteristics and attracts different types of users (Zielinski and Botero, 2019).

7.2.3. Desktop studies

This research recommends that the Data Collection and Analysis section should undertake a desktop study to identify all the necessary data required to draft the MPs. The data should be identified from the area of influence of that particular beach (Micallef, 2003a; Williams and Micallef, 2009) and include:

- a. Reviewing any legislation, policies and by-laws as there is a probability that it will affect the mentioned area (Gore, 2007; Williams and Micallef, 2009). As explained in Chapter Three, there are no legislations or policies that focus on beaches, but there are multiple policies that refer to the coast, such as the SPED and ICZM. In addition, different legislations fall under different authorities. In this regard, this research recommends setting up a beach policy that would integrate all the other relevant legislation and by-laws into a single approach (Section 7.2.1),
- b. Identify what data are already available and what need to be collected. This should include, but not be limited to, historical data, beach processes, natural characteristics, hard engineering structures, land use, social surveys, health and safety and facilities,
- c. Develop an inventory and store all the relevant information in a spatial database (Gore, 2007) to help to identify gaps in data and also analyse conflicts between different users, and
- d. Classify the beaches according to Zammit Pace et al. (2019) as discussed earlier in Section 2.5.5.2.

This study highlighted the importance of identifying responsibilities to minimise duplication of work; this would also apply to the data being collected. Given that some of the stakeholders already collect important data such as bathing water

quality, it is recommended that an agreement between the relevant stakeholders and the BMU is reached to start sharing data. This would ensure that the data is not duplicated and/or lost, but it would be used for management purposes. Additionally, further recommendations would be to reach an agreement with the University of Malta and other educational institutions (even from overseas, especially from the UK who visit Malta for fieldtrips) to be able to:

- i. Circulate relevant reports and dissertations to extract relevant data/information, and
- ii. Produce ideas on what data could be collected by students, which then could be used by the BMU, such as beach profiling, rate of erosion and deposition and amount of litter to mention a few, using appropriate protocols. This would be beneficial for all bodies as students would be learning what data are required and how to collect it and analyse it with the help of the BMU officers. The BMU would benefit, by obtaining the necessary data while saving costs and time.

Based on earlier discussions (Sections 2.5.4, 2.5.5.2 and 5.2.1), each beach requires its own MP, since each one has different characteristics that attract different types of users (Zielinski and Botero, 2019). In fact as explained in Section 2.5.5.2, Williams and Micallef, (2009) identified five beach classifications which were slightly modified by Zammit Pace et al., (2019) for the Maltese Islands. For instance, in the case of the Maltese Islands, which are heavily populated, it was found that only about half of the Maltese beaches were classified as remote and rural. This could be because beaches were located adjacent to roads which are used by various people and would have some sort of management and facilities. Conversely, the beaches in Gozo and Comino were classified as remote and rural, “reflecting the less populated and developed character of those islands” (Zammit Pace et al., 2019, p. 219). Zammit Pace et al. (2019) also explained that urban beaches are very limited in Maltese Islands, since these either have roads and promenades constructed on them or are deprived of their sediment due to a change in the land drainage and changes to the adjacent littoral. It must also be noted that construction in hinterland and engineering works

along the littoral (such as jetties, and promenades) through hard engineering affect changes to beach morphology and composition. Hence, this emphasises the need for an individual MP for each beach, as not all of them have the same administration and facilities. This research therefore recommends that a survey of all the beaches in the Maltese Islands is undertaken and classified accordingly. This would ensure that beaches are being managed according to their requirements (Botero and Hurtado, 2009).

7.2.4. Field observations/Data collection

After all the required data have been identified through the desktop studies, the next step approach would be to collect information from the field. In this case, this research has identified three types of data to be collected:

- a. Beach register - As explained in Section 4.4.2, an amended version of the beach registration, as proposed by Micallef and Williams (2004) and Williams and Micallef (2009), was developed in this research (Appendix II). The register contains information about the beach, its accessibility, erosion, beach occupancy, any sensitive areas, safety parameters and beach facilities. It is recommended that such information is collected by the beach managers every season, given that this could change from one season to another. This register should then be passed on to the Data Collection and Analysis section for further investigation.
- b. Identified data – This refers to the data that was identified during the desktop studies, such as beach processes, land use and cultural heritage. Such data should be collected by the Data Collection and Analysis Section. Additionally, other data that are already being collected by other stakeholders, such as the beach water quality, should be made available to the BMU so that the necessary analysis required for the MPs could be undertaken by the Data Collection and Analysis section.
- c. Carrying capacity – Based on earlier discussions (Sections 2.5.5.3 and 3.3.6), such information would be essential to limit overcrowding, retain the

beaches' attractiveness and avoid their deterioration (Marin et al., 2009). Given that the crowd varies according to the seasonality and individual preferences (Pereira Da Silva, 2002; Gore, 2007), the beach carrying capacity must be measured on multiple occasions during the year. For instance, during summer, the beach supervisors can count the number of people on the beach at a certain time every day, while beach managers could record this data during the rest of the year. This can also be done by remotely monitoring beaches through specific webcams (Huamantínco Cisneros et al., 2016; Rodella et al., 2020).

All the data collected for the MPs should be written in a protocol and indicate the type of data and the methodology used, to enhance transparency and provide traceability (Gore, 2007).

7.2.5. Encouraging Public and Stakeholder involvement

As highlighted in Section 2.2.4, public participation and stakeholder involvement is essential as “it allows a more equitable and transparent process, reduces conflicts and makes final decisions more effective and legitimate” (Koutrakis et al., 2011, p. 821). In addition, according to Peña-Alonso et al. (2018), the inclusiveness of the social perspective into MPs can improve them. In this research both the public (through face-to-face and online questionnaires) and key stakeholders (through semi-structured interviews) were involved. In addition, as explained by Soriani et al., (2015), Article 14 of the ICZM protocol for the Mediterranean requires that participation by stakeholders should take place both during the preparation and execution of any plans and/or projects. Thus, this research recommends that beach users' questionnaires and stakeholder semi-structured interviews are undertaken. These should be taken throughout the different seasons every year to identify any patterns.

In Sections 5.4.5 and 5.4.6, the beach user participants were asked whether they were willing to contribute to management decisions and, if not, who in their opinion should participate. Even though the majority did not want to contribute themselves

to management decisions, the following question showed that the beach users would want the locals (Maltese people) to participate. This could be since those who answered the question did not know the topic or were not interested in the subject of beach management and so preferred not to participate (Marzuki, 2015). Hence, it should be suggested that the full details of the subject about beach management that are going to be discussed are given to the public in both the Maltese and English languages and such details should be made attractive and shared on social media, radio and television to encourage participation (Mannarini, Fedi, and Trippetti, 2010). It should also be recommended that the details about beach management to be discussed are shared at the respective LCs and leaflets are sent to the relevant localities to target most of the people. It would be ideal if such meetings are held multiple times, on different days and times, to accommodate most of the participants. Such meetings should be in the form of a discussion where participants are allowed to express themselves. These discussions can also be done on site sometimes. Also, community consultations should occur frequently and at every stage of the project to keep the participants informed of what is happening, thereby giving them the chance to contribute to the research. As explained by Williams and Micallef (2009), Ariza et al. (2014) and Prati et al. (2016), including the beach users and stakeholders in the discussions makes it easier to implement change as they would have been involved from the beginning, thus maximising the effectiveness of the MPs.

Additionally, even though there seems to be a consensus that involving the public and the key stakeholders is essential for an effective MP (Section 6.7.2), currently not every manager/stakeholder is willing to embrace public consultation, or to include the public during each stage of the process. A case in point is the extension of Għadira beach, where such a decision was made by higher authorities without even notifying the direct stakeholders, such as the kiosks that earn their income from the beach. In Section 6.7.2, it was evident that even though participation is a concept that everyone seems to agree with, such a practice is limited, and managers agreed that decisions should be taken by experts. Even though this research agrees that decisions should be taken by experts, this should only occur after several consultations have

taken place and the feedback has been received from both the public and key stakeholders and taken into consideration. As Peña-Alonso et al. (2018, p. 927) argued, users' perceptions should be used with caution, as they can be "a useful tool to identify socio-environmental issues that can be improved by managing bodies".

Thus, based on the importance of involving the public and key stakeholders, this research recommends that the BMU sets up an LPC (Lozoya et al., 2014). This committee would be made up of beach users/ the public and relevant stakeholders who would want to take part in the management discussions and should meet every month during the summer and bi-monthly during the remainder of the year to discuss any issues and/or recommendations. This committee should be under the responsibility of the Public Outreach Section. This section should also be in charge of conducting beach users' questionnaires on all the beaches and semi-structured interviews with the relevant stakeholders. This information could be collected throughout the year and then passed on to the Data Collection and Analysis Section for further analysis and integration with other data collected.

7.2.6. Drafting the management plan

After all the data have been collected and analysed, the next step would be to draft a MP for each beach, since each one is unique and attracts different visitors (Zielinski and Botero, 2019). The MP should have clear aims and objectives (James, 2000b; Gore, 2007; Williams and Micallef, 2009) which should be based on the data collected from that particular beach. For instance, a remote beach such as L-Imġiebaħ would aim to conserve the natural beach and safeguard it from any development, whereas the aim of an urban beach such as Pretty Bay (which has a number of land uses) would be to develop facilities without creating user conflict and provide a safe environment for bathers. The aims should then be followed by a clear set of objectives as these will set the approach to managing the beach (Gore, 2007; Williams and Micallef, 2009). These objectives "may need to be reviewed and changed periodically to accommodate possible changes in physical aspects of the beach, resident and visitor type, activities and needs over time" (Gore, 2007, p. 744). In addition, the objectives should cover management throughout the whole year,

and not focus only on one season. For instance, those beaches that obtain the BF Award should develop other objectives to continue managing the beach during the other seasons.

Once the aims and objectives of a particular beach have been established, the beach manager should use the data that were collected and analysed, including the public and stakeholders' perception, and draft the MP. As soon as the MP is in its final draft, the beach managers, together with the Public Outreach Section, should re-consult with the public and the authorities both through the IGC as well as through the LPC. This would serve two purposes: 1) to disseminate the data that have been collected, and 2) to collect their views on what has been proposed and, if needed, amend the MP accordingly. Additionally, this would not only enrich the MP with various knowledge from different people but, when it comes to implementing it, there is the probability that such plans would be more widely accepted and effective as the people would have been involved from the early stages (Duvat, 2012; Peña-Alonso et al., 2018).

Gore (2007, p. 745), argues that "a common problem with beach management plans is the lack of evidence concerning their effectiveness". Hence, this research also recommends that key indicators are established to be able to check that the objectives are working (Hannelore, Belpaeme, and Mees, 2006). Given that it is an integrated MP, there should be a mixture of biological, physical, ecological and socio-economic indicators (Gore, 2007) to be able to identify whether it is being effective. The indicators can vary over time and should be collected by the Data Collection and Analysis section and the information input in the integrated database. Finally, the MP should be finalised and ready to be implemented on that particular beach.

7.2.7. Implementing the management plan

Once the final version of the MP is completed, the next phase would be to implement it. In this regard, as outlined in Section 7.2.2 and Figure 7.2:

- a. The beach manager would oversee that the administration of the beach is compliant with the MP with the help of the beach supervisors,

- b. The Data and Collection Analysis Section would be responsible for collecting all the data required (even that collected by third parties, schools and Universities) to fulfil the indicators,
- c. The Monitoring and Enforcement Section would have the obligation to monitor and enforce the MPs. They would also have the legal power to fine those who disobey the law, and
- d. The Public Outreach Section would have the responsibility of disseminating data of the results found from that particular beach, as well as reaching the public and collecting the necessary data through questionnaires, focus groups and interviews as required by the indicators from time to time.

Finally, as explained in the previous section (Section 7.2.6), the objectives of the MP need to be reviewed periodically to cater for any changes there might have been during the implementation. In this regard, this research suggests that each MP should be reviewed every three years, giving enough time to test it. If an issue is identified earlier, this could be tackled immediately, making the MP more effective. The review of the MPs should be the responsibility of the beach managers as they are the most knowledgeable persons on that particular beach. The review of the MPs should be based on the information collected from the indicators. The reviewing of the MP should re-start from the desktop studies and follow the model as discussed in this Chapter.

7.3. Summary

This chapter has put forward a series of recommendations for the most effective practices for the Maltese Islands, which in turn can also be used for other SISs. It outlines a detailed step-by-step approach regarding how a sustainable and integrated beach management model should be implemented via recommendations, with particular reference to the Maltese Islands. In Malta there is no specific beach management body except for the one under the MTA (Chapter Three) which focuses on one main management tool, the BF scheme, and only manages particular beaches,

namely those that attract most tourists. Given the fact that the beaches in Malta only amount to c. 1.9% of the coastline, and are being heavily eroded due to an increase in coastal development (Cassar, 2003; UNEP/MAP, 2003b; Zammit Pace et al., 2017, 2019; Zielinski and Botero, 2019), this research recommends the need for a specific beach management policy. This research also suggests the establishment of a BMU so that all beaches could be managed according to their specific plan following the step-by-step model. As discussed in Section 7.2.6, each beach must have its specific MP since they do not have the same characteristics and/or attract a different type of visitor (Zielinski and Botero, 2019). In this regard, Figure 7.3 puts forward a summary version of how the beach management framework for the Maltese Islands could be taken forward.

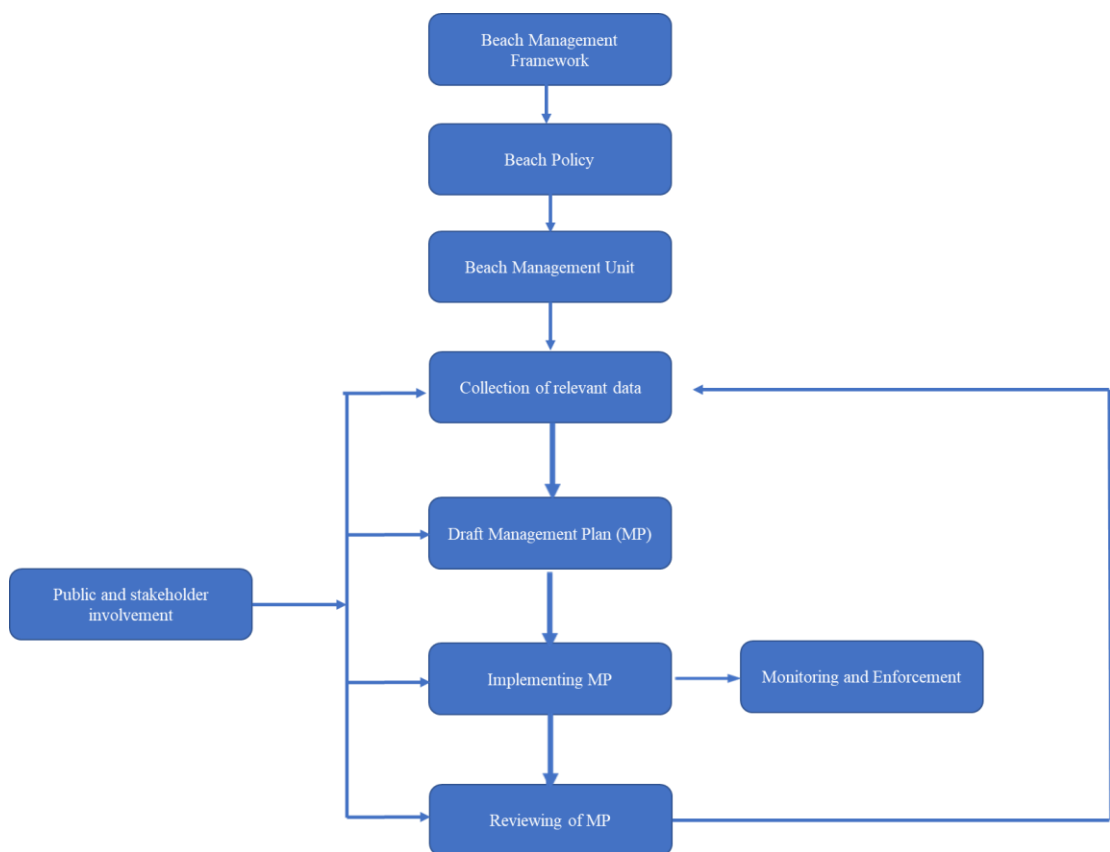


Figure 7.3: A summary of the Beach Management Framework for the Maltese Islands (Source: Author, 2020)

The beach management framework (Figure 7.3), as well as Sections 2.2.4 and 7.2.5, stress the significant importance of involving the public and stakeholders during each

stage of the MP. Both the public and the stakeholders should have the right to actively participate in management decisions to ensure the effectiveness of the MP (Soriani et al., 2015). It is also very important that they are involved from the early stages of drafting the MP (such as focus groups), during its implementation (such as meetings, distribution of leaflets as well as beach users' questionnaires and stakeholders' perception through semi-structured interviews) and also during its review (through focused groups). Their participation is very important as they are the main users of the beaches and can provide knowledge and preferences (Prati et al., 2016). Also, by keeping them informed and encouraging them to participate in discussions, there is a greater chance that changes are accepted and management plans are more effective (Ariza et al., 2014; Prati et al., 2016).

In view of this, a beach management model would be essential for managers as it not only establishes responsibilities but also indicates what data need to be collected/observed in order to draft and implement a management plan to monitor and safeguard beaches. The following chapter (Chapter Eight), will conclude the research by revisiting the objectives, taking into consideration the discussion and findings in Chapters Five, Six and Seven. It will then discuss the further contribution of the study and recommendations for future research.

Chapter Eight: Conclusion

8.1. Introduction

This chapter concludes this research by first summarising the key findings for each objective that was set out in Chapter One. This is then followed by an evaluation of the study and how this research has contributed and extended the existing knowledge base. This chapter concludes with the recommendations for other studies that can be undertaken in the future.

As explained in Chapter Four, the use of case studies can produce a deeper understanding of the real-life situation. Hence, this research focused on four case studies around Malta. The research investigated 1) beach users' perception of the beach and its management, which was carried out both face-to-face as well as disseminated online to reach other beach users, and 2) stakeholder views on current beach management processes. The use of multiple methods increased the reliability of the results and was able to effectively tackle the research objectives.

8.2. Conclusions drawn in relation to the aims and objectives

The overall aims of this research were to:

- critically assess the perceptions of the processes and approaches to beach management in the Maltese Islands, with a focus on beach users and stakeholders' knowledge, and
- develop an integrated and sustainable framework for the future.

The aims were achieved through the five objectives described below and in Chapter One. Chapter Eight focuses on the findings and how these have addressed each objective.

1. To evaluate the historical development of beach management in the Maltese Islands;
2. To critically analyse current beach management practices in Malta;

3. To understand beach users' perceptions towards beach management in Malta;
4. To investigate the views of key experts and stakeholders to identify critical issues surrounding the current beach management processes;
5. To develop an integrated and sustainable beach management model for the Maltese beaches and other small island states.

8.2.1. *Objective one: Historical development of beach management*

The first objective of this research was to evaluate the historical development of beach management in the Maltese Islands. This objective is related mainly to Chapter Three.

The review and evaluation of the historical development of the Maltese Islands have identified the main issues that are being faced by Malta's beaches. Such issues have been known for more than 20 years, but most of them still have not been resolved. As mentioned in Chapter Three, this could be due to a lack of finances, MPs and enforcement, as well as lack of national expertise (Micallef, 2002). In addition, as explained in Chapter One, there have been a few studies related to beaches and their management. If beaches are not managed from their physical, environmental, development and socio-economic aspects, there is the risk of losing this limited resource. The main issues that this research identified were:

- No one single authority responsible for the beaches in Malta;
- No clear definition of beaches, and beach management;
- High competition amongst sectors;
- Coastal development and beach erosion;
- Increases in tourists;
- Lack of beach carrying capacity;

- Lack of communication and harmonisation amongst the different government departments;
- No policy or regulations specifically for the protection of coasts and sandy beaches;
- No or limited data related to the coast;
- Lack of management and enforcement; and
- Lack of public participation.

8.2.2. *Objective two: Current beach management practices in Malta*

The second objective was to critically analyse current beach management practices in the Maltese Islands. This objective was mainly related to the second part of Chapter Three and parts of Chapter Six, where beach management practices in Malta were discussed through the literature and stakeholder interviews. The main management tool that was being used in the Maltese Islands was the BF Award. In 2019, 12 beaches were awarded the BF - ten of these were being managed by the MTA, while the other two were being managed by their respective hotels. The BF is in place every year from 15 of June to 15 September and is operative between 10 am and 6 pm (Malta Tourism Authority, 2018). Outside these hours, the beach falls under the remit of the LC and the police (P. Dingli, personal communication, June 20, 2016). As explained in Chapters Five, Six and Seven, even though the initiative behind this scheme had good intentions and kept the beaches up to a certain set of standard, such a tool alone was not enough. This is because such a scheme was only operative during the summer period and specific hours, thus leaving the beach exposed to illegalities and vandalism at other times. Additionally, the BF tool omitted other factors such as the beach users' perceptions, and data on the physical characteristics of the beach, to mention a few (Ariza, Sardá, et al., 2008; Lucrezi et al., 2015; Klein and Dodds, 2018; Zielinski and Botero, 2019). This research highlighted the importance of effective all year-round beach management. This research also found that the BF was only being applied to those beaches that were deemed to attract

tourists or were easily accessible. It was noted that up till 2019, the MTA managed two other beaches in the south but could not obtain the BF Award because they did not meet all the 33 criteria required by the scheme. Nevertheless, the MTA applied the same management as in the other BF beaches, resulting in similar problems.

The EHD was responsible for collecting water samples from different beaches over 23 weeks to test the bathing water quality. In 2019, 95% of the Maltese bathing waters were classified as excellent quality (European Environment Agency, 2020). However, this indicator still met criticism, as it was argued that the quality of water changed throughout the day depending on the number of bathers. Thus, a sample taken at a particular location and time could not be deemed representative of the whole bathing area (Nelson and Williams, 1997; Micallef, 2002). Other types of management were:

- Zones reserved for swimmers, which fell under the responsibility of TM;
- Beach concessions, which fell under the responsibility of either the MTA or of the Lands Authority;
- Beach access and furniture for those who were physically limited under the CMD;
- By-laws that fell under the responsibility of the LCs; and
- Dog-friendly beaches under the EHD.

This research found that beaches were micromanaged and fragmented between various authorities. Even though some of the stakeholders (namely those that worked within the government such as MTA, EHD, and CMD) argued that they collaborated, other interviewees who were not involved in higher management did not entirely agree with such a statement. They suggested the need for more communication and ongoing involvement in management decisions. This research highlighted that monitoring and enforcement were lacking, which could be either due to lack of communication (Ariza, Sardá, et al., 2008) or lack of finances (Planning Authority, 2002; Nava Fuentes et al., 2017).

Specifically, this research recommends the setting up of a dedicated Beach Management Unit (Section 7.2.2) that will liaise with all the relevant authorities and to which the main management of beaches will be entrusted. Regarding the monitoring and enforcement of beaches, this should not be the remit of the police, but there should be a section within the BMU that monitors and enforces beaches all year round and would have the legal power to issue fines.

8.2.3. *Objective Three: Understanding beach users' perceptions*

Understanding beach users' perceptions of beach management in Malta was the third objective of this research. This objective has been met through background research on public participation and its importance in Chapter Two and conducting beach users' questionnaires and recording their results in Chapter Five.

Chapter Two highlighted the importance of public participation in management decisions. Botero et al. (2013) argued that for beach management to be effective, it would be imperative to understand the perceptions (how people interpret something) and attitudes (the way they feel about it) of beach users in order to propose a plan based on their needs. In this research literature review, it was found that public participation was lacking and, when the public were involved, their opinions were not considered in the final decisions. It was suggested by various researchers (Micallef, 2002; Marzuki, 2015; Chen et al., 2017) that the public should be involved from the early stages to avoid any resistance at the end of the decision.

Chapter Five evaluated public involvement by discussing the results obtained from the beach users' questionnaires. The questionnaire focused on the participants' preferences (choosing a variable over another) for, and familiarity with, beach management and their perceptions of how they could improve beaches. Thus, this chapter highlighted various aspects that, if taken into consideration while drafting the MP, could increase its effectiveness. The key findings of the questionnaires were:

- Most of the people chose a beach based on proximity and accessibility. However, users from the south of Malta were ready to travel to the northern

beaches because these were considered to be cleaner, with crystal clear waters;

- Due to its inefficiency, public transport was not very popular with the locals. In fact, more than 85% preferred using their car to travel to beaches;
- The preferred activities carried out on the beach were sunbathing, chatting, staring at the beach and reading. It was interesting to note that on two beaches which were BF (Għajn Tuffieħa and Għadira), barbequing and camping still took place, most probably after 6 pm when there was little or no enforcement. Both activities were prohibited on the sandy beaches;
- Regarding activities in the water, the majority of the participants preferred swimming, followed by playing with balls or frisbees and snorkelling;
- The results also showed that participants did not choose a beach because it was a BF. In fact, when they were asked to define it, most of the answers mentioned a clean beach and water and the presence of lifeguards, which made respondents feel safe. Even though the aforementioned factors were part of the BF criteria, people were also concerned about further issues such as educational aspects, safety, environmental management and water quality (Foundation for Environmental Education, 2018);
- As mentioned earlier, camping, barbeques, and dogs were not allowed on the case studied beaches. Nevertheless, according to their responses, most of the participants did not know this. Hence, this showed the lack of knowledge on BF beaches and the Code of Conduct even though there were clear signs on the beach specifying this;
- According to the participants' perceptions, the main issues facing Malta's beaches, including litter, overcrowding and polluted seawater. In fact, they suggested the need for improvement in cleanliness, management and enforcement;

- With respect to their involvement in management decisions, participants showed interest in being kept informed and even agreed that locals should be involved in such decisions. However, they were not keen on participating themselves.

Understanding beach users' perceptions on beaches and their management could help managers create an effective management plan (Peña-Alonso et al., 2018) for each beach. This is because individual beaches attract different users and have different characteristics (Zielinski and Botero, 2019). The research has identified a series of important recommendations that will help in the management of beaches:

- Allocating areas on beaches where barbeques, camping and dogs would be allowed. This would reduce the illegalities taking place. Additionally, monitoring and enforcement should then be increased to ensure that these activities are contained within that area and there is no damage;
- Identifying activities, both on the beach and in the water, so beach managers can easily identify spatial conflicts in order to better plan and manage the area;
- Promote the use of public transport or park-and-ride facilities to reduce the number of private cars, traffic and the problem of parking;
- Promote public participation by setting up a LPC which would suggest ideas and discuss related issues;
- Extend the hours of the BF and add further tools such as the carrying capacity of the beach, collecting relevant data such as beach processes and beach users' and stakeholders' perceptions to promote an integrated approach. Beach management should take place all year round.

8.2.4. *Objective Four: Key issues and potential stakeholder conflicts*

In addition to understanding the beach users' perspective, this research investigated the views of key experts and stakeholders to identify critical issues surrounding current beach management process. This was the fourth objective of this research, for which interviews were undertaken with 19 stakeholders to examine their perspectives on beach management and identify common issues and conflicts. These results were then presented in Chapter Six. The key findings were:

i. Lack of definitions and unclear responsibilities

This could create confusion about the responsibility amongst the different authorities and stakeholders. This could also create misunderstandings and conflicts among them (Sardá et al., 2015) and resolving such issues become too complex as they have to pass through various sectors (Micallef, 2002). This research recommends the need to create a beach policy where both beaches and their management are defined. It suggests establishing a specific BMU that would be responsible for the management of beaches. It also proposes the creation of an IGC. This would enable other authorities who are directly or indirectly involved in beaches to explain their role, what data they collect and improve communication to avoid duplication of work (Shipman and Stojanovic, 2007; Sardá et al., 2015; Prati et al., 2016).

ii. Blue Flag beaches

Even though, those beaches that were given the BF Award had improved in terms of cleanliness and safety, some of the stakeholders showed their concern regarding the integration between the BF criteria and the environment. In addition, the BF only operated during a certain timeframe, and so at night and during the winter the beach was not being managed. Some of the stakeholders also disagreed with the fact that certain activities, such as barbeques and camping, were not allowed on the beach and suggested that such activities should be allocated a space and managed accordingly, instead of banning them completely. As a result, this research suggests that the BF Award should be amalgamated within an integrated MP. This would

ensure that all the beaches, not only those which attract tourists, are being managed throughout the whole year.

iii. Data availability

The stakeholders argued that either the relevant data were not available, or if they were, they were not being used for management. If data were available, they were not all put in a central database system and/or not standardised. The issue of who will finance and undertake the data collection and where to store it has been mentioned in various reports since the 1990s. Even though the situation has been improved through the INSPIRE Directive, which obliges Malta to share environmental spatial data, the latter is still in its early phases and more investigation into its efficiency is needed (Cromptvoets et al., 2018). In addition, it does not include any data on beach processes or social perception and thus such data still needs to be collected and kept by the BMU.

iv. Public awareness and participation

In general, most of the stakeholders who held higher positions agreed that people should be made aware of decisions being taken on beaches and there should be signs at each entrance as well as educational activities. Nevertheless, results obtained from the beach users' questionnaires showed that most of the participants did not know about these. This research suggests that an alternative means of engendering public understanding is necessary. Conversely, regarding public involvement in management decisions, some of the stakeholders agreed that this should take place up to a certain limit. Others highlighted the importance of involving the public throughout the process. In line with Marzuki (2015), this research agrees that involving the public throughout the process to the end is crucial. It also stresses the importance of keeping them informed of why certain decisions are taken, to make the process more transparent while encouraging their future involvement (Marzuki, 2015). This research suggests the creation of a LPC (Lozoya et al., 2014). This committee would discuss management decisions with the public and relevant stakeholders and encourage them to express their opinions.

v. Complaints

The main complaints that stakeholders received from beach users were:

- Litter – participants complained about the amount of litter on beaches, particularly in the evenings. Beach cleaning would therefore need to be provided more frequently. This research recommends that beach supervisors should be given legal powers to fine those users not abiding by the rules (Lucrezi et al., 2015).
- Permits – to carry out any activity such as barbeques and sports activities relevant permits are required. However, most beach users did not know this or who to contact. Some permits required more than one approval from different authorities, which often led to confusion. This research recommends that there should be a Permitting Section within the BMU that would be responsible for such permissions.
- Amount of seagrass – according to the kiosk owners, people complained about the seagrass residue left on the beaches. In 2017, ERA had issued the Operating Procedures on Beach Cleaning guidelines which prohibited its removal before April, leaving such residues on the beach for longer periods. This research found that the kiosks did not agree with such a decision and did not know why this was being undertaken. This shows the lack of communication between the authorities and other stakeholders. This research stresses the importance of keeping management decisions transparent and also explaining to those involved why such decisions are being taken (Lozoya et al., 2014).

8.2.5. *Objective Five: Development of an integrated and sustainable management framework*

The last objective of this research was to develop an integrated and sustainable beach management model for the Maltese beaches and which could also be used by

other SISs that have similar issues. This objective was addressed by the beach management framework in Chapter Seven.

This research recommends the following:

- i. Development of a beach policy, - where terms such as beach, management, erosion and deposition are defined. The policy should identify the number of beaches, delineate precise boundaries and provide a beach classification typology.
- ii. Establishing a BMU – this should be composed of five sections: Beach Management, Data Collection and Analysis, Monitoring and Enforcement, Public Outreach and Permitting. An IGC made up of other authorities who have direct/indirect influence should be set up to discuss any issues and recommendations.
- iii. Desktop studies – these are required to identify the necessary data that would need to be collected to draft the MPs.
- iv. Field observations/Data collection – all the data that were identified in point iii, will be collected during this phase. A beach register and the carrying capacity of that specific beach will also be collated.
- v. Public and stakeholder involvement – beach users’ questionnaires and interviews with the relevant stakeholders will take place to identify their perceptions and behaviours. A LPC for each beach will also be established to allow the public to be involved in management decisions as well as to discuss any issues and/or recommendations.
- vi. Drafting of MP – once all the data have been collected and analysed, a MP for each beach will be drafted each with clear aims and objectives. During the drafting stage it is also suggested to undertake a public hearing and consultation exercise so that there is the opportunity for the public to express their opinions. A set of indicators would need to be developed to measure the effectiveness of the MP at a later stage.

- vii. Implementation of MP – once the MP is established, this should be tested on site using the indicators to monitor any progress and also enforce any illegalities. The MP should be reviewed every three years to cater for any changes that might have occurred during the years.

8.3. Contribution of the study

This thesis has significantly contributed both to the theory, and to the practical development, of beach management in the Maltese Islands. This can also be applied to other SISs with similar attributes. As identified in Chapters One and Four, studies investigating beaches and their management in the Maltese Islands are very limited and/or outdated. This research makes a significant contribution to the literature by providing a thorough historical overview of beach management in the Maltese Islands since they gained independence. This research outlines the major issues being faced by Maltese beaches as well as current management practices.

This research identified the importance of public participation and stakeholder views in management decisions, which was not very extensive. Another key contribution of the research is the integration of original data from beach users' perceptions and stakeholder views on beaches and their management.

Finally, a major contribution of this research to the wider knowledge is the integrated and sustainable beach management model. This has been developed to guide the responsible authority in attaining an effective, holistic and a long-term management plan for each beach. This model can also be used by other SISs which have issues similar to the Maltese Islands.

8.4. Future research recommendations

Following the findings of this research, this study has identified other areas that could be considered for further research.

This research has used four case studies to investigate the perception of beach users (so how the latter understands the concept) and the views of stakeholders on beach management. The research focused on two BF beaches; a third beach which is managed but cannot attain the BF status because it does not meet all the criteria; and a fourth beach which up to the time of writing, was not under any management scheme. It would be interesting for future research to include other beaches (including Gozo and Comino) with different types of management so as to be able to see a more complete picture of the situation in the Maltese Islands. During 2019, there were several applications to nourish beaches, of which four were granted. It would also be useful if future research would include the re-nourished beaches and how they are being managed. Such case studies would provide further insights from the beach users and stakeholders' perspectives and could then be compared to other case studies which have not been modified in such a way.

A key element of this study focused on the perceptions of the beach users but distinguishing between locals and tourists was complicated. It would be interesting if future studies could extend this type of analysis by more effectively differentiating between the two. This could then be compared with previous results and identify whether tourists have different opinions and views from the locals, and how this would affect the management of the beaches.

This research has highlighted the importance of public participation and how this can contribute to effective beach management (Prati et al., 2016). During the beach users' questionnaires it was found that the participants themselves were reluctant to participate in management decisions, but they still felt there was a need for the locals to be involved. This research calls for further analysis on how to increase, improve and make public participation more attractive. The latter could then be tested by creating focus groups or meetings and, through a bottom-up approach, examine the way the managers and the public interact with each other.

Even though it was not the scope of this research to study the carrying capacity of beaches, it would be interesting to know whether the requirement of 3 m² for each bather has changed since it was established in the late 1990s (Micallef, 2002). Tourist

numbers have increased dramatically since 2000, with more than 2.5 million tourists arriving on Malta each year (NSO, 2019). Nevertheless, even though there have been several beaches which have been re-nourished in the past couple of years, the rate of pressure on such valuable resources still remains high (Zammit Pace et al., 2019). Identifying current beach carrying capacity would help in their management and would provide recommendations on how to disperse the number of users to other beaches, such as those with a rocky shoreline.

During a press conference in 2019, the Minister for Tourism stated that by the summer of 2020²⁷ there would be a beach policy in place (Arena, 2019). This research has recommended the establishment of a beach policy, so it would be interesting to compare the government beach policy proposals with the ones outlined in this study. It would also be interesting to disseminate my work with the MTA and collaborate with them on how to incorporate the model with the new policy.

The results obtained from comparing the two policies could be integrated to develop future best practice.

²⁷ Up till the day of writing, there was no information on this beach policy.

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Appendices

Appendix I - Letter from the Faculty Ethics Committee and UPR16



Faculty of
Science

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10 January 2017

FAVOURABLE ETHICAL OPINION

Study Title: A critical analysis of beach management on the Maltese Islands: Examining the past, looking at the present and planning for the future.

Reference Number: SFEC 2016-077A

Date Submitted: 19 December 2016

Thank you for submitting your protocol amendment to the Science Faculty Ethics Committee (SEFC) for ethical review in accordance with current procedures¹.

I am pleased to inform you that SFEC was content to grant a favourable ethical opinion of this protocol amendment on the basis described in the submitted documents listed at Annex A, and subject to standard general conditions (*See Annex B*).

Please note that the favourable opinion of SFEC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including the University of Portsmouth or supervisor, prior to the start of the study.

Wishing you every success in your research

A handwritten signature in black ink, appearing to be 'P. Morris'.

Dr Paul Morris
Vice Chair, Science Faculty Ethics Committee

Annexes

A - Documents reviewed

B - After ethical review - Guidance for researchers

¹ Procedures for Ethical Review, Science Faculty Ethics Committee, University of Portsmouth, October 2012 (to be updated).

Information:

Dr Jonathan Potts – 1st Supervisor
Dr Malcolm Bray – Supervisor
Dr Brian Baily - Supervisor
Holly Shawyer - Faculty Administrator

Statement of compliance

SFEC is constituted in accordance with the Governance Arrangements set out by the University of Portsmouth

After Ethical Review

If unfamiliar, please consult the advice After Ethical Review² which gives detailed guidance on reporting requirements for studies with a favourable opinion, including, notifying substantial amendments, notification of serious breaches of the protocol, progress reports and notifying SFEC of the end of the study.

Feedback

You are invited to give your view of the service that you have received from the Faculty Ethics Committee. If you wish to make your views known please contact the administrator at ethics-sci@port.ac.uk

ANNEX A Documents reviewed

The documents ethically reviewed for this application

<i>Document</i>	<i>Version</i>	<i>Date</i>
A-PI Submission email Amendment to the Ethics Application - Pace - SFEC 2016 - 077		19 December 2016
B-Notice of Substantial Amendment - Marie Louise Pace		19 December 2016
C-Amended Ethics application form - Marie Louise Pace	V2	19 December 2016

ANNEX B - After ethical review - Guidance for researchers

1. This Annex sets out important guidance for researchers with a favourable opinion from a University of Portsmouth Ethics Committee. Please read the guidance carefully. A failure to follow the guidance could lead to the committee reviewing and possibly revoking its opinion on the research.
2. It is assumed that the research will commence within 1 year of the date of the favourable ethical opinion or the start date stated in the application, whichever is the latest.
3. The research must not commence until the researcher has obtained any necessary management permissions or approvals – this is particularly pertinent in cases of research hosted by external organisations. The appropriate head of department should be aware of a member of staff's research plans.
4. If it is proposed to extend the duration of the study beyond that stated in the application, the Ethics Committee must be informed.
5. If the research extends beyond a year then an annual progress report must be submitted to the Ethics Committee.
6. When the study has been completed the Ethics Committee must be notified.
7. Any proposed substantial amendments must be submitted to the Ethics Committee for review. A substantial amendment is any amendment to the terms of the application for ethical review, or to the protocol or other supporting documentation approved by the Committee that is likely to affect to a significant degree:
 - (a) the safety or physical or mental integrity of participants
 - (b) the scientific value of the study
 - (c) the conduct or management of the study.
- 7.1 A substantial amendment should not be implemented until a favourable ethical opinion has been given by the Committee.
8. Researchers are reminded of the University's commitments as stated in the [Concordat to Support Research Integrity](#) viz:
 - maintaining the highest standards of rigour and integrity in all aspects of research
 - ensuring that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards
 - supporting a research environment that is underpinned by a culture of integrity and based on good governance, best practice and support for the development of researchers
 - using transparent, robust and fair processes to deal with allegations of research misconduct should they arise
 - working together to strengthen the integrity of research and to reviewing progress regularly and openly
9. In ensuring that it meets these commitments the University has adopted the [UKRIO Code of Practice for Research](#). Any breach of this code may be considered as misconduct and may be investigated following the University [Procedure for the Investigation of Allegations of Misconduct in Research](#). Researchers are advised to use the [UKRIO checklist](#) as a simple guide to integrity.

FORM UPR16**Research Ethics Review Checklist**

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information)



Postgraduate Research Student (PGRS) Information		Student ID:	UP715213
PGRS Name: Marie Louise Zornatz			
Department: Geography		First Supervisor: Dr Jonathan Polls	
Start Date: (or progression date for Prof/Doc students)		September 2013	
Study Mode and Route:		Part-time <input checked="" type="checkbox"/> Full-time <input type="checkbox"/> MPhil <input type="checkbox"/> PhD <input checked="" type="checkbox"/> MN <input type="checkbox"/> Professional Doctorate <input type="checkbox"/>	
Title of Thesis:		A critical analysis of beach management systems and processes on the Maltese Islands, focusing on public and key stakeholder perceptions	
Thesis Word Count: (excluding ancillary data)		74,527	
<p>If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study.</p> <p>Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).</p>			
UKRIO Finished Research Checklist: (If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.com/ethics/academic-research/finished-research/)			
a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
b) Have all contributions to knowledge been acknowledged?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
e) Does your research comply with all legal, ethical, and contractual requirements?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Candidate Statement:			
I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)			
Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):		DFEC 2016-077A	
If you have not submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:			
Signed (PGRS):		Date:	
M Louise Zornatz		22/9/2020	

Appendix II – Beach Register

Beach Register

Date of field survey _____

Name of beach _____ Beach classification¹² _____

Responsible Authority: _____

Municipality (Local Council): _____

Type: Natural Beach ☐ Replenished beach ☐ Rocky shore ☐

Length¹³: _____ (m) Width¹⁴: _____ (m)

Seafloor: Sand _____% Stone _____% Cobble/Pebble _____% Rock _____%

Shore type¹⁵: Sand beach _____% Gravel beach _____% Pebble beach _____%

Cobble beach _____% Rocky shore _____% Concrete quay _____%

Accessibility:

To site: Public beach: By road ☐ Walking ☐ Public transport ☐

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☐ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion? Yes ☐ No ☐

Are there obvious signs of deposition? Yes ☐ No ☐

Is there present monitoring of erosion? Yes ☐ No ☐

Was there past monitoring of erosion? Yes ☐ No ☐

If so, by whom? _____

Are there known records or erosion maps available? Yes ☐ No ☐

If so where? _____

¹² Based on (Zammit Pace et al., 2019)

¹³ Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

¹⁴ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

¹⁵ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ¹⁶ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday			
Bathing season weekends			
Non-bathing season			

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Safety parameters:

Does it have any award? If yes, name it: _____

What is the bathing water status? _____

Does the beach have:	Yes	No
Lifeguards		
Beach supervisors		
Swimming zones		
First Aid posts		
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)		
Access for emergency vehicles		

Beach facilities:

Toilet facilities	Public	Clean	
		Poorly Managed ¹⁷	
	Restaurant	Clean	
		Poorly Managed	
Shower facilities	Public	Clean	
		Poorly Managed	
	Restaurant	Clean	
		Poorly Managed	
Litter bins	Regularly emptied	Cigarette receptacles	
	Poorly managed	Freshwater tap	
Restaurants	Snack bars	Umbrellas for rent	
Information notice	Security boxes	Sail boating	
Adequate parking facilities	Wheelchair access	Pedalos	
Deckchairs for rents	Speedboat towing activities	Jet skiing	
Scuba diving	Wind surfing	<u>Para-sailing</u>	
Summer houses for rent	Bed and Breakfast accommodation	Camping grounds	
Apartment complexes	Hotels		
Others			

Other comments:

Beach Register

Date of field survey 11/9/16

Name of beach Ghadiya Bay Beach classification¹ Rural

Responsible Authority: MTA (Summer only)

Municipality (Local Council): Mellicha

Type: Natural Beach ☐ Replenished beach ☒ Rocky shore ☐

Length²: 915 (m) Width³: 51 (m)

Seafloor: Sand 100 % Stone _____ % Cobble/Pebble _____ % Rock _____ %

Shore type⁴: Sand beach 100 % Gravel beach _____ % Pebble beach _____ %

Cobble beach _____ % Rocky shore _____ % Concrete quay _____ %

Accessibility:

To site: Public beach: By road ☒ Walking ☒ Public transport ☒

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☒ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Are there obvious signs of deposition?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Is there present monitoring of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Was there past monitoring of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If so, by whom? _____		
Are there known records or erosion maps available?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If so where? _____		

¹ Based on (Zammit Pace, Bray, Potts, & Baily, 2019)

² Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

³ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

⁴ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ⁵ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday			
Bathing season weekends	250	370	80%
Non-bathing season			

Middle part

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Nature 2000 - Special Area of Conservation - Zone fit-Bath-
fit Giegel to Malta (SAC) → Habitats Directive

Bird path in the vicinity

Safety parameters:

Does it have any award? If yes, name it: Blue Flag

What is the bathing water status? excellent

Does the beach have:	Yes	No
Lifeguards	✓	
Beach supervisors	✓	
Swimming zones	✓	
First Aid posts	✓	
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)	✓	
Access for emergency vehicles	✓	

⁵ Beach users on beach and in water (Williams and Micallef, 2009, p. 203)

Beach facilities:

Toilet facilities	Public	Clean	✓
		Poorly Managed ⁶	
	Restaurant	Clean	✓
		Poorly Managed	
Shower facilities	Public	Clean	
		Poorly Managed	
	Restaurant	Clean	
		Poorly Managed	
Litter bins	Regularly emptied	Cigarette receptables	✓
	Poorly managed	Freshwater tap	✓
Restaurants	✓ Snack bars	✓ Umbrellas for rent	✓
Information notice	✓ Security boxes	Sail boating	✓
Adequate parking facilities	Wheelchair access	Pedalos	✓
Deckchairs for rents	✓ Speedboat towing activities	✓ Jet skiing	✓
Scuba diving	✓ Wind surfing	✓ Para-sailing	✓
Summer houses for rent	✓ Bed and Breakfast accommodation	Camping grounds	
Apartment complexes	✓ Hotels		
Others			

Other comments:

Litter Bins are always full in the evening

⁶ Poorly managed facilities are facilities that are dirty, non-functioning, or not easily accessible (Williams and Micallef, 2009, p. 207)

Beach Register

Date of field survey 9/9/16

Name of beach Għajn Tuffieħa Beach classification¹ ural

Responsible Authority: MTA (Summer) GAA (all year)

Municipality (Local Council): Mġarr

Type: Natural Beach ☐ Replenished beach ☒ Rocky shore ☐

Length²: 300 (m) Width³: 33 ^{North} 6 ^{South} (m)

Seafloor: Sand 100 % Stone % Cobble/Pebble % Rock %

Shore type⁴: Sand beach 75 % Gravel beach 20 % Pebble beach %

Cobble beach % Rocky shore % Concrete quay 5 % ^{→ high}

Accessibility:

To site: Public beach: By road ☐ Walking ☒ Public transport ☐

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☒ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Are there obvious signs of deposition?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Is there present monitoring of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Was there past monitoring of erosion?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If so, by whom?	<u>Planning Authority (Erosion project)</u>	
Are there known records or erosion maps available?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If so where?	<u> </u>	

¹ Based on (Zammit Pace, Bray, Potts, & Baily, 2019)

² Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

³ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

⁴ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ⁵ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday	100		60%
Bathing season weekends			
Non-bathing season			

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Area of Ecological Importance (GN 117/95)
Area of High Landscape Value (GN 110/96)
Special Area of Conservation Zone (11-Batter born Adam Mollison)
or River Parks SAC

Safety parameters:

Does it have any award? If yes, name it: Blue Flag

What is the bathing water status? Excellent

Does the beach have:	Yes	No
Lifeguards	✓	
Beach supervisors	✓	
Swimming zones	✓	
First Aid posts	✓	
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)	✓	
Access for emergency vehicles		

Not sure

⁵ Beach users on beach and in water (Williams and Micallef, 2009, p. 203)

Beach facilities:

Toilet facilities	Public	Clean	
		Poorly Managed ⁶	
	Restaurant	Clean	✓
		Poorly Managed	
Shower facilities	Public	Clean	
		Poorly Managed	
	Restaurant	Clean	✓
		Poorly Managed	
Litter bins	Regularly emptied	Cigarette receptacles	✓
	Poorly managed	Freshwater tap	✓
Restaurants	✓ Snack bars	Umbrellas for rent	✓
Information notice	✓ Security boxes	Sail boating	
Adequate parking facilities	Wheelchair access	Pedalos	✓
Deckchairs for rents	✓ Speedboat towing activities	Jet skiing	
Scuba diving	✓ Wind surfing	✓ Para-sailing	✓
Summer houses for rent	Bed and Breakfast accommodation	Camping grounds	
Apartment complexes	Hotels		
Others			

Other comments:

Litter bins are emptied but every morning so till every there is a lot of rubbish

⁶ Poorly managed facilities are facilities that are dirty, non-functioning, or not easily accessible (Williams and Micallef, 2009, p. 207)

Beach Register

Date of field survey 9/9/16

Name of beach Onepa Beach classification¹ rural

Responsible Authority: Local Council

Municipality (Local Council): Mogor

Type: Natural Beach ☒ Replenished beach ☐ Rocky shore ☐

Length²: 0.200m (m) Width³: 52 (m)

Seafloor: Sand 50 % Stone % Cobble/Pebble 50 % Rock %

Shore type⁴: Sand beach 85 % Gravel beach 10 % Pebble beach %

Cobble beach _____ % Rocky shore _____ % Concrete quay 5 %

Accessibility:

To site: Public beach: By road ☒ Walking ☒ Public transport ☒

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☒ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion? Yes ☒ No ☐

Are there obvious signs of deposition? Yes ☐ No ☒

Is there present monitoring of erosion? Yes ☐ No ☒

Was there past monitoring of erosion? Yes ☐ No ☒

If so, by whom? _____

Are there known records or erosion maps available? Yes ☐ No ☒

If so where? _____

¹ Based on (Zammit Pace, Bray, Potts, & Baily, 2019)

² Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

³ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

⁴ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ⁵ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday		70	40%
Bathing season weekends			
Non-bathing season			

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Nature 2000 SAC Zone for Bathing Redun Majjicsa u
Rasir Rofeb

Safety parameters:

Does it have any award? If yes, name it: No

What is the bathing water status? Excellent

Does the beach have:	Yes	No
Lifeguards		✓
Beach supervisors		✓
Swimming zones	✓	
First Aid posts		✓
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)	✓	
Access for emergency vehicles	✓	

⁵ Beach users on beach and in water (Williams and Micallef, 2009, p. 203)

Beach facilities:

Toilet facilities	Public	Clean	
		✓ Poorly Managed ⁶	✓
Shower facilities	Restaurant	Clean	
		Poorly Managed	
	Public	Clean	
		Poorly Managed	
Litter bins	Regularly emptied	Cigarette receptables	
	Poorly managed	✓ Freshwater tap	
Restaurants	Snack bars	✓ Umbrellas for rent	✓
Information notice	✓ Security boxes	Sail boating	
Adequate parking facilities	Wheelchair access	✓ Pedalos	✓
Deckchairs for rents	✓ Speedboat towing activities	✓ Jet skiing	
Scuba diving	✓ Wind surfing	Para-sailing	
Summer houses for rent	Bed and Breakfast accommodation	Camping grounds	
Apartment complexes	Hotels		
Others			

Other comments:

⁶ Poorly managed facilities are facilities that are dirty, non-functioning, or not easily accessible (Williams and Micallef, 2009, p. 207)

Beach Register

Date of field survey 12/9/16

Name of beach Pretty Bay Beach classification¹ urban

Responsible Authority: MTA

Municipality (Local Council): Birzebbuga

Type: Natural Beach ☐ Replenished beach ☒ Rocky shore ☐

Length²: 208 (m) Width³: 28 (m)

Seafloor: Sand 100 % Stone % Cobble/Pebble % Rock %

Shore type⁴: Sand beach 75 % Gravel beach % Pebble beach %

Cobble beach % Rocky shore % Concrete quay 25 %

Accessibility:

To site: Public beach: By road ☒ Walking ☒ Public transport ☒

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☐ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Are there obvious signs of deposition?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Is there present monitoring of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Was there past monitoring of erosion?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If so, by whom?		
Are there known records or erosion maps available?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If so where?		

¹ Based on (Zammit Pace, Bray, Potts, & Baily, 2019)

² Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

³ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

⁴ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ⁵ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday	50	20	10%
Bathing season weekends			
Non-bathing season			

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Safety parameters:

Does it have any award? If yes, name it: NO

What is the bathing water status? Excellent

Does the beach have:	Yes	No
Lifeguards	✓	
Beach supervisors	✓	
Swimming zones	✓	
First Aid posts	✓	
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)	✓	
Access for emergency vehicles	✓	

⁵ Beach users on beach and in water (Williams and Micallef, 2009, p. 203)

Beach facilities:

Toilet facilities	Public	Clean	
		✓ Poorly Managed ⁶	✓
	Restaurant	Clean	
		Poorly Managed	
Shower facilities	Public	Clean	
		Poorly Managed	
	Restaurant	Clean	
		Poorly Managed	
Litter bins	Regularly emptied	✓ Cigarette receptacles	✓
	Poorly managed	Freshwater tap	
Restaurants	✓ Snack bars	✓ Umbrellas for rent	✓
Information notice	✓ Security boxes	Sail boating	
Adequate parking facilities	Wheelchair access	✓ Pedalos	
Deckchairs for rents	✓ Speedboat towing activities	Jet skiing	
Scuba diving	Wind surfing	Para-sailing	
Summer houses for rent	✓ Bed and Breakfast accommodation	✓ Camping grounds	
Apartment complexes	✓ Hotels		
Others			

Other comments:

Located in a port

⁶ Poorly managed facilities are facilities that are dirty, non-functioning, or not easily accessible (Williams and Micallef, 2009, p. 207)

Beach Register

Date of field survey 10/9/16

Name of beach St George's Bay Beach classification¹ Urban

Responsible Authority: MTA (summer)

Municipality (Local Council): San Giljan

Type: Natural Beach ☐ Replenished beach ☒ Rocky shore ☐

Length²: 85.7 (m) Width³: 22.5 (m)

Seafloor: Sand 100 % Stone 0 % Cobble/Pebble 0 % Rock 0 %

Shore type⁴: ^{Cobble} Sand beach 95 % Gravel beach 0 % Pebble beach 0 %

Cobble beach 0 % Rocky shore 0 % Concrete quay 5 %

Accessibility:

To site: Public beach: By road ☒ Walking ☒ Public transport ☒

Private beach: Ownership type ☐ Entrance fee ☐

To water environment: Gentle underwater slope ☒ Steep underwater slope ☐

Beach erosion:

Are there obvious signs of erosion? Yes ☐ No ☒

Are there obvious signs of deposition? Yes ☐ No ☒

Is there present monitoring of erosion? Yes ☐ No ☒

Was there past monitoring of erosion? Yes ☐ No ☒

If so, by whom? _____

Are there known records or erosion maps available? Yes ☐ No ☒

If so where? _____

¹ Based on (Zammit Pace, Bray, Potts, & Baily, 2019)

² Length is measured along the shoreline (Williams and Micallef, 2009, p. 202)

³ Width is measured from water's edge at low tide to back of beach (Williams and Micallef, 2009, p. 202)

⁴ Shore type refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc. (Williams and Micallef, 2009, p. 203)

Beach occupancy:

Time of year	Number of bathers ⁵ (11:00)	Number of bathers (16:00)	% beach occupancy
Bathing season weekday			
Bathing season weekends	75	200	80%
Non-bathing season			

Designated sensitive areas:

(Briefly describe any protected/sensitive areas in the area)

Special Area of Conservation - Zona J.I. Bator J.I. Grigel
to Molte

Safety parameters:

Does it have any award? If yes, name it: Blue Flag

What is the bathing water status? Excellent

Does the beach have:	Yes	No
Lifeguards	✓	
Beach supervisors	✓	
Swimming zones	✓	
First Aid posts	✓	
Beach safety information notices (Such as code of conduct, presence of rip currents, telephone number and location of nearest health centre etc)	✓	
Access for emergency vehicles	✓	

⁵ Beach users on beach and in water (Williams and Micallef, 2009, p. 203)


Beach facilities:

Toilet facilities	Public	Clean	✓
		Poorly Managed ⁶	
	Restaurant	Clean	
		Poorly Managed	
Shower facilities	Public	Clean	
		Poorly Managed	
	Restaurant	Clean	
		Poorly Managed	
Litter bins	Regularly emptied	Cigarette receptacles	✓
	Poorly managed	Freshwater tap	
Restaurants	✓ Snack bars	✓ Umbrellas for rent	✓
Information notice	✓ Security boxes	Sail boating	
Adequate parking facilities	Wheelchair access	✓ Pedalos	✓
Deckchairs for rents	✓ Speedboat towing activities	✓ Jet skiing	
Scuba diving	Wind surfing	Para-sailing	
Summer houses for rent	✓ Bed and Breakfast accommodation	✓ Camping grounds	
Apartment complexes	✓ Hotels	✓	
Others			

Other comments:

⁶ Poorly managed facilities are facilities that are dirty, non-functioning, or not easily accessible (Williams and Micallef, 2009, p. 207)

Appendix III – Beach user questionnaire template



Beach user's perception on the management of beaches

My name is Marie Louise Pace and I am currently a part – time PhD student in the Department of Geography at the University of Portsmouth, UK. I am undertaking a research project on the status of beach management in the Maltese Islands and part of this research is to analyse public perception on sandy beaches. Please answer the questions as fully and openly as possible. This questionnaire should take about ten minutes to complete and it is both anonymous and confidential.

Beach: _____

Time: _____

Date: _____

Section A – This beach and you

1. Are you from:

☐ Malta *(please name your home place)* _____

☐ Abroad *(please name your home place)* _____

1

2. Why do you usually prefer a beach and not another? *Please rank the 3 most important aspects for choosing the beach.*

Where 1 = most important, 2 = second important to you, etc.

	Rank
Accessibility	
Beach reputation	
Blue Flag beach	
Car park	
Clean sand (no litter, cigarette butts etc.)	
Close to where you are staying / living	
Crowd level is adequate for you	
Discover new place	
Family-friendly facilities	
Good water quality	
Recommended (publicity, friends, etc.)	
Relaxation / tranquillity	
Safe and secure	
Scenery / views	
Services and facilities	
Spirituality/religion	
Swimming	
Tranquillity	
Walking / jogging	
Water sports (e.g.: water polo, sailing etc.)	

3. How do usually travel to the beach?

Bicycle	
Private car / motorcycle	
Public Transport	
Taxi	
Walk	
Other*	

*Please specify: _____

4. How often do you go to the beach?

First time		5 – 6 days a week	
Every day		Once every fortnight	
1 – 2 days a week		Once a month or more	
3 – 4 days a week		Rarely	

Section B – Your opinion on this beach

5. What activities do you carry out? Please tick [✓] all that apply

On the beach

Beach games (e.g.: making sandcastles, flying a kite etc.)	
Camping	
Chatting	
Listening to radio/music	
Looking after children	
Picnic/BBQs	
Playing with mobiles/tablets etc.	
Reading	
Sports (e.g.: jogging, beach volleyball, etc.)	
Staring at the beach (looking around)	
Sunbathing / sleeping	
Walking	

At sea

Diving	
Fishing	
Other activities (e.g.: paddling/speed boats, canoeing)	
Playing (with the ball, Frisbee etc.)	
Snorkelling	
Sports (e.g.: water polo, surfing)	
Swimming	

6. How would you rate the quality of the beach you have chosen earlier? Please tick [✓] all that apply.

Where 1 = very poor, through to 5 = very good or N/op = no opinion



	1	2	3	4	5	N/op
Accessibility						
Clean beach						
Clean water						
Environment / Scenery						
Family- friendly						
Noise						
Parking space						
Safety / security						
Services / facilities						
Space availability						
Sports / activities						
Swimming zones						

7. How would you define the amount of people on the beach?
Please tick [✓] one

☐ Few people ☐ Average amount ☐ Overcrowded

8. Any other comments on question 7?

Section C – Your familiarity with beach management

9. Do you know what a Blue Flag Beach is? If no, please move onto question 11.

☐ Yes ☐ No ☐ Unsure

10. If your answer to question 10 was yes, kindly explain in your opinion what Blue Flag beach is:

11. Do you think that:

Dogs are allowed on the beach you have chosen?

☐ Yes ☐ No ☐ Don't know

BBQs are allowed on the beach you have chosen?

☐ Yes ☐ No ☐ Don't know

Camping is permitted on the beach you have chosen?

☐ Yes ☐ No ☐ Don't know

12. Any other comments on question 11?

13. In your opinion, what does beach management consist of? Please rank the 3 most important aspects.

Where 1 = most important, 2 = second important to you, etc.

	Rank
Blue Flag beach (meet standards e.g.: water quality and education)	
Car park facilities	
Clean beach	
Clear and crystal water	
Coastal defences such as sea walls, breakwaters etc.	
Conserving the natural qualities of the beach and its environment	
Consultation with the local community and beach users	
Having a management plan (guidelines how to monitor the beach)	
Having a swimming zone	
Having lifeguards and beach supervisors	
Having notice boards showing what you can and cannot do	
Preventing erosion and maintaining sand on the beach	
Regulating BBQs areas	
Regulating camping areas	
Regulating dog access	
Various facilities (e.g.: kiosks, beach rental shops, lavatory facilities)	

14. By whom do you think that the beach you chose is being managed? *Please tick [✓] all that apply*

Don't know	
Environment and Resource Authority (ERA) (ex-MEPA)	
GAIA Foundation	
Local Council	
Local hotels and concession holders	
Malta Tourism Authority (MTA)	
Ministry for Sustainable Development, the Environment and Climate Change (MSDEC)	
Ministry for Tourism	
Nature Trust	
Privately managed	
Other*	

*Please specify: _____

15. How would you rate the management of the beach you chose?
Please tick [✓] one

Very poor	
Poor	
Average	
Good	
Very good	
No opinion	

16. Kindly explain your answer to question 15

17. Would you be willing to pay a fee to have access to the beach, if that meant having an improved or maintained beach quality?

☐ Yes ☐ No ☐ Don't know

18. In your opinion, which are the most important problems that are being faced by Malta's beaches? *Please rank the 3 most important problems.*

Where 1 = most important, 2 = second important to you, etc.

	Rank
Beach Erosion	
Litter	
Overcrowding	
Polluted sea	
Sea-grass banquettes (Alka)	
Too little management	
Too much coastal development	
Too much management	
Too much noise	
Traffic too close to beach	

18. What would you change/arrange to improve the management of Malta's beaches?

19. Would you like to be kept informed about management decisions concerning this beach if given the opportunity?

☐ Yes ☐ No ☐ Don't know

20. Would you like to participate in management decisions concerning this beach if given the opportunity?

☐ Yes ☐ No ☐ Don't know

21. Should local communities participate in management decisions? Or should it be left to the experts?

☐ Involve locals ☐ Left to experts ☐ Don't know

Section D – About yourself (Optional)

22. Age:

☐ Under 18 ☐ 19 – 24 ☐ 25 – 40 ☐ 41 – 65 ☐ over 65

23. Gender

☐ Male ☐ Female ☐ Transgender

24. You are here:

☐ Alone
☐ With a friend/group of friends
☐ With family
☐ With spouse/partner
☐ With teenagers
☐ With young children

25. Occupation:

☐ Householder

☐ Manual

☐ Professional

☐ Retired

☐ Self employed

☐ Semi-skilled worker

☐ Skilled worker

☐ Student

☐ Unemployed

Thank you for your time!

Appendix IV – Abstracts of various interviews (template)

a) Abstract from the Planning Authority interview

<p><u>CAMP Malta</u></p> <p>31. How were you involved in the CAMP Malta? <i>Kif kont involut fil-CAMP Malta?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>32. What were the main outcomes of CAMP Malta? Do you think that this project was beneficial to Malta? If yes, kindly explain in more detail. If no, why not? <i>X'kienu r-riżultati ewlenin ta' 'CAMP Malta? Tahseb li dan il-proġett kien ta' benefiċċju għal Malta? Jekk iva, nista' nispjega f'aktar dettall. Jekk le, għaliex le?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>33. In the CAMP MALTA was the coastal resource authority board ever set up? If yes, what are its aims and how often do they meet? If not, why haven't this been set up? <i>Fil-CAMP MALTA qatt twaqqaf il-bord ta' l-awtorità tar-riżorsi kostali? Jekk iva, x'inhuma l-għanijiet tiegħu u kemm-il darba jiltaqgħu? Jekk le, għaliex ma ġiex stabbilit dan?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>34. Was the good practice in integrated coastal areas management for Malta ever published? Kindly explain answer. <i>Kien gi ippubblikat l good practice in integrated coastal areas management for Malta? Spjega t-tweġiba.</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

b) Abstract from one of the key experts' interview

<p>15. Can you explain the aims of the Bathing Area Registration and Evaluation (BARE) technique? <i>Tista' nispjega l-għanijiet tat-teknika tar-Registrazzjoni u l-Evalwazzjoni taż-Zona tal-Għawm (BARE)?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>16. How does BARE differ from other techniques such as the Blue Flag Award? <i>Kif BARE tvarja minn tekniki oħra bħall-Blue Flag Award?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>17. In your opinion, what advantages and disadvantages do you think BARE has over Blue Flag? <i>Fl-opinjoni tiegħek, liema vantaġġi u żvantagġi tahseb li BARE għandha fuq il-Blue Flag?</i></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>18. Do you know if the BARE technique is being used in the management of beaches in the Maltese Islands? If yes, who is implementing it and where? If no, why was the programme not adopted and is it being used elsewhere (Mediterranean, small islands etc)? <i>Taf jekk it-teknika</i></p>

c) Abstract from one of the NGOs interview

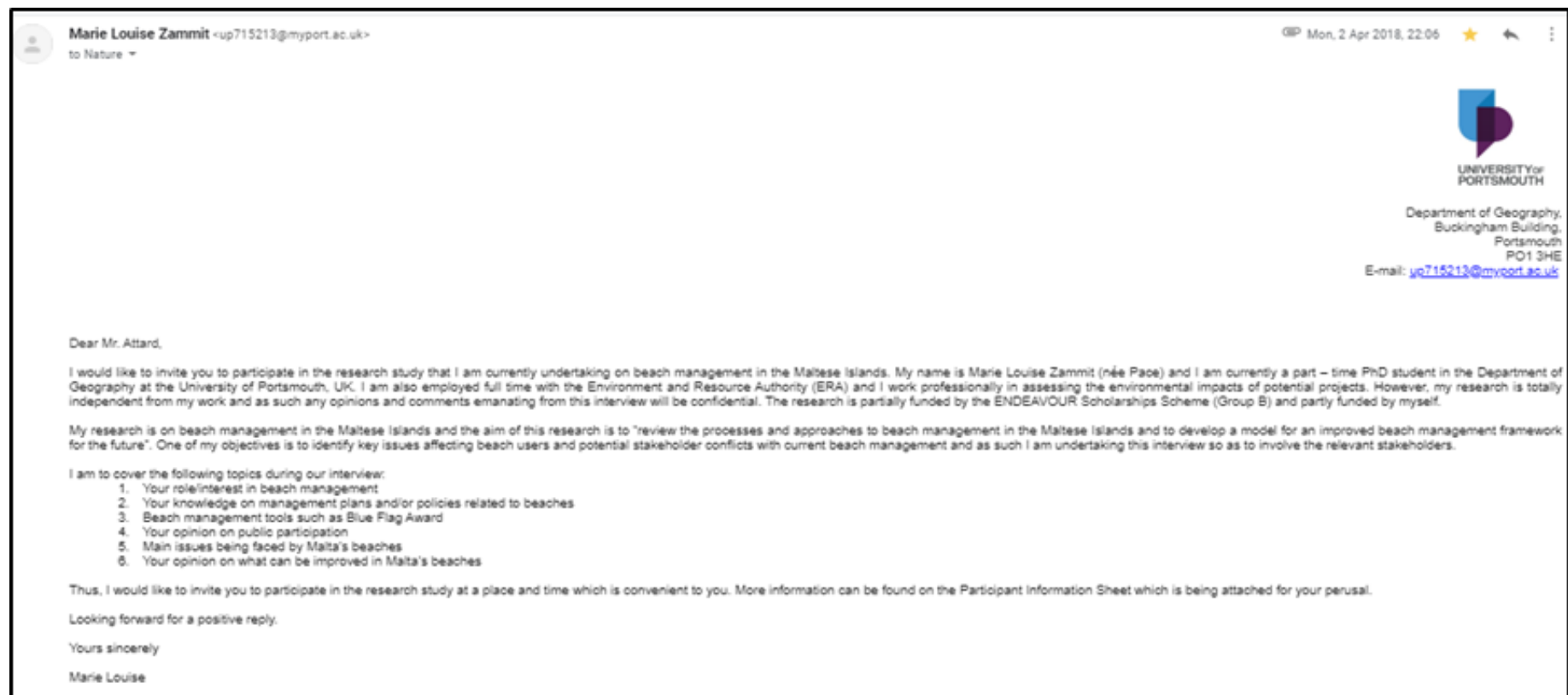
13. How is the beach of Ghajn Tuffieha being managed? *Kif qed tiġi amministrata l-bajja ta' Ghajn Tuffieha?*

14. Do you think that current practices in Ghajn Tuffieha are sufficient? If not, what would you add, remove and/or modify and why? *Tassew li l-prattici attwali f'Ghajn Tuffieha huma biżżejjed? Jekk le, x' iżżid, meħħi u / jew timmodifika u għaliex?*

15. What are the working hours of the lifeguards and the beach supervisors? What happens or who is responsible for the management of the beach outside office hours? *X'in huma l-hinijiet tax-xogħol tas-salvataġġ u s-superviżuri tal-bajja? X'jiġri jew min hu responsabbli mill-ġestjoni tal-bajja barra mill-hinijiet tal-uffiċċju?*

16. Do you take care of the beach management all year round or only in summer? If the latter, please specify the dates? What happens and who is responsible outside these dates? *Tiehu hsieb il-ġestjoni tal-bajja s-sena kollha jew biss fis-sajf? Jekk l-aħħar, jekk jogħġbok specifika d-dati? X'jiġri u min hu responsabbli barra dawn id-dati?*

Appendix V – Invitation email to stakeholders



Appendix VI – Participant Information Sheet



Department of Geography,
Buckingham Building,
Lion Terrace,
Portsmouth,
P01 3HE

STUDY TITLE: A critical analysis of beach management on the Maltese Islands: Examining the past, looking at the present and planning for the future

Dear Potential Interview Participant,

My name is Marie Louise Zammit (née Pace). I am currently undertaking a part time PhD at the University of Portsmouth, to analyse beach management practices in the Maltese Islands. I am also employed full time with the Environment and Resource Authority (ERA) and I work professionally in assessing the environmental impacts of potential projects. However, my research is totally independent from my work and it is partially funded by the ENDEAVOUR Scholarships Scheme (Group B) and partly funded by myself. Thus, any opinions and comments emanating from this interview will be confidential (unless otherwise agreed by your kind self). For further details of my topic please see my research brief that comprises the final page of this document.

The initial phase of data collection consists of a number of semi-structured interviews with stakeholders such as: Non-Governmental organisations, local councils, government entities, environmental consultants and other stakeholders currently involved in the beach management in Malta.

You have been invited as a participant in this semi-structured interview since you either have an important role within a relevant organisation or are involved with or have an interest in the management of the beaches. I will travel to meet

with you at a mutually convenient time and location. The interview will roughly take forty-five minutes of your time.

During our discussion, I will be taking notes, however, I would like your permission to record the interview (optional). This is to provide me with the opportunity to go over again our conversation at a later stage while I am analysing the data to make sure that I have correctly noted and interpreted your comments. Kindly note that should you wish not to be recorded, the interview can still be conducted. In that case, notes would be taken, but your name would not be listed and no direct quotations would be taken or used. Once, I transcribe the data, all participants will be given the opportunity to review, edit and approve their transcripts prior to using it in the research. This procedure will contribute to the accuracy of transcription and help you ensure that no potentially sensitive statements are included.

Taking part in this research is entirely voluntary. If at any point during the interview you decide that you no longer wish to participate in the study or that you do not wish to answer any particular questions, you can choose to do so, without giving any reasons if you do not wish to. If you do withdraw from the survey after some data have been collected, you will be asked if you are content for the data collected so far to be retained and included in the study, or else if you prefer that the data collected can be destroyed and not included in the study. Once the survey has been completed, and the data analysed, it will not be possible for you to withdraw your data from the study. In order to help you decide whether or not to participate in the interview, I am attaching copies of both the consent form (which I will ask you to complete just before the interview begins) and the list of questions that I intend to ask you during the interview.

Should you wish a copy of the overview results, I am happy to send you a copy following completion of the research. Kindly send me an e-mail requesting a copy of the results. Also, further information will be made available to participants upon request.

Possible disadvantages and risks

Given the fact that the topic of beach management is very specialised and the number of people that are involved in it are limited, there is the possibility for your identity to be guessed by other experienced third parties even if your name is not linked to your account. For this reason, there is the opportunity either to take actions to reveal your identity, or to hide your identity according to your preference. Either way, as mentioned above, you will be given the opportunity to review, edit and approve the transcript prior using it in the

research so that you will have full control of any material that might be released.

Confidentiality

The data, when made anonymous, may be presented to others at scientific meetings, or published as a project report, academic dissertation or scientific paper or book. Anonymous data, which does not identify you (unless you have agreed to be named), may be used in future research studies approved by an Appropriate Research Ethics Committee.

The raw data, which would identify you, will not be passed to anyone outside the study team without your express written permission. The exception to this will be any regulatory authority which has the legal right to access the data for the purposes of conducting an investigation in exceptional cases.

Data retention

Data will be securely retained for ten years using the methods described above and the University google drive which is encrypted following publication of the thesis.

Funded research

This research is partially funded by the ENDEAVOUR Scholarships Scheme (Group B) and partly funded by myself. None of the researchers or study staff will receive any financial reward by conducting this study, other than their normal salary / bursary as an employee / student of the University.

I would appreciate if you can kindly let me know at your earliest whether or not you are interested in participating in this survey. If you have a query, concern or complaint about any aspect of this study, please feel free to contact me, either by e-mail (up715213@myport.ac.uk) or by phone (00356 79266982). Should you decide in participating in the interview, I will contact you to schedule a date, time and location to conduct the interview that is the most convenient to you.

If you think that someone else from your organisation might be interested or more suitable to take part in this interview, I would be obliged if you can forward them this e-mail and ask them to contact me.

I look forward to hearing from you soon.

Thank you

Thank you for taking time to read this information sheet and for considering volunteering for this experiment. If you do volunteer for this survey your

consent will be sought on the following page (Annex D). You will then be given a copy of this information sheet and your signed consent form, for you to keep.

Yours sincerely

Marie Louise Zammit

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PO1 3HE
Telephone: 00356 79266982
Email: up715213@myport.ac.uk

Please note that the research brief below is the final part of this participant information sheet.

Research Brief:

**“A critical analysis of beach management on the Maltese Islands:
Examining the past, looking at the present and planning for the future”**

Aim of the study:

The aim of this study is to critically analyse the situation of beach management in the Maltese Islands. The research will focus on four case studies which are: Pretty Bay, Ġhajn Tuffieħa, Ġhadira Bay and Ġnejna Bay. Experience on beaches elsewhere has found that beach management should include the perception of the beach users and its stakeholders to be successful. My research will determine the extent to which this is relevant to Malta. Results will contribute towards my overall aim of developing improved methods of beach management.

Objectives of the study

1. To identify the best beach management methods and practices through critical review of the literature;
2. To review historical beach management practices/policies in the Maltese Islands;
3. To identify stakeholder perception and potential conflicts with current beach management;
4. To appraise beach management practices in Malta with respect to best practices in other comparable areas;
5. To develop a model for an integrated and sustainable beach management framework for the Maltese beaches and other small island states.

Expected outcomes

This research will identify any gaps in current provision as well as assessing any past and current management measures with the help of key stakeholders. It will also identify what the locals and tourists are expecting from a particular beach. A database with all the information for the four case studies collected through onsite observations and desktop studies will be created. Finally, a sustainable beach management framework will be developed in order to assist stakeholders in managing the area, not only in Malta but in other countries with similar aspects.

Appendix VII – Consent Form



Department of Geography,
Buckingham Building,
Lion Terrace,
Portsmouth,
P01 3HE

STUDY TITLE: A critical analysis of beach management on the Maltese Islands:
Examining the past, looking at the present and planning for the future.

Name of researcher: Marie Louise Zammit

Please initial each box

- | | |
|---|----------------------|
| 1. I confirm that I have read and understood the attached information sheet for the above study. I confirm that I have had the opportunity to consider the information, ask questions and that these have been answered satisfactorily. | <input type="text"/> |
| 2. I agree to take part in the above study. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. | <input type="text"/> |
| 3. *I consent for the interview to be audio-recorded (optional). I understand that I will be given the opportunity to review, edit and approve the transcript to ensure accuracy. | <input type="text"/> |
| 4. *I agree to being a named participant and quoted by name (optional). I understand that I will be given the opportunity to review, edit and approve the transcript to ensure accuracy. | <input type="text"/> |
| 5. *I understand that the results of this study may be published and / or presented at meetings/conferences. I give my permission for direct quotes from my interview to be used in publications (optional). I understand that I will be given the opportunity to review, edit and approve the transcript to ensure accuracy. | <input type="text"/> |
| 6. Data collected during this study could be requested by regulatory authorities. I give my permission to any such regulatory authority with legal authority to review the study to have access to my data, which may identify me. | <input type="text"/> |

Name of Participant:

Name of Person taking Consent:

Signature:

Signature:

Date:

Date:


*Consents 3 to 5 are optional. An interview can still be conducted without these consents. In those cases, notes would be taken, the participants name would not be listed and direct quotations would not be taken or used.

Appendix VIII – List of key themes

★ Name	Files
<input type="radio"/> Beach management	
<input type="radio"/> Carrying capacity	
<input type="radio"/> Current Practices	
<input type="radio"/> Definitions	
<input type="radio"/> Experts	
<input type="radio"/> Gov entities	
<input type="radio"/> Kiosk	
<input type="radio"/> NGOs	
<input type="radio"/> Enforcement	
<input type="radio"/> Improvements	
<input type="radio"/> Issues	
<input type="radio"/> Maintenance	
<input type="radio"/> management of beaches outside BF	
<input type="radio"/> Other countries	
<input type="radio"/> Priority	
<input type="radio"/> Blue Flag	
<input type="radio"/> Benefits	
<input type="radio"/> BF Improved	
<input type="radio"/> BF in other countries	
<input type="radio"/> Drawbacks	
<input type="radio"/> Problems and solutions in BF	
<input type="radio"/> Case studies	

★	Name	
} <input type="radio"/>	Case studies	
} <input type="radio"/>	Ghadira Bay	
} <input type="radio"/>	Ghajn Tuffieha	
} <input type="radio"/>	Gnejna	
} <input type="radio"/>	Other beaches	
} <input type="radio"/>	Pretty Bay	
} <input type="radio"/>	St. George's Bay	
} <input type="radio"/>	Management plans and policies	
} <input type="radio"/>	Current	
} <input type="radio"/>	Proposed	
} <input type="radio"/>	Other	
} <input type="radio"/>	Data	
} <input type="radio"/>	Funds	
} <input type="radio"/>	Meetings	
} <input type="radio"/>	Reports	
} <input checked="" type="radio"/>	Responsible for shoreline	
} <input type="radio"/>	Role	
} <input type="radio"/>	People	
} <input type="radio"/>	Awareness	
} <input type="radio"/>	Complaints	
} <input type="radio"/>	Participation	
} <input type="radio"/>	Projects	
} <input type="radio"/>	BARE	

Appendix IX – Example of coding



UNIVERSITY OF
PORTSMOUTH

Department of Geography,
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E-mail: un715213@port.ac.uk

1. For how long have you been operating here? Do you always remember the beach as is? If not, can you kindly describe how it used to be before? What was changed? When did things start changing? What do you think of the changes?

We have been operating here for 28 years. There were some changes in the beach over the years but only few of these were positive such as the removal of BBQs. However, other things such as lavatory facilities were never increased and the level of cleanliness is still low.

2. What do you understand by beach management?

That someone really takes care of the management of the beach such as the level of cleanliness, see that the regulations that are being observed. I do not agree that three different ministries are managing this beach: MTA, Cleansing Department and ERA. ERA is keeping many things from happening.

3. Are you involved in the management of this beach? If yes, how are you involved? If not, would you like to be involved? Why do you think you are not involved?

At this point, we are only involved in the management of our area. However, we would like to be more involved in the management before they decide anything. In the news, they say that they consulted us, but this is not true. For example, we only learnt about the project in Ghadira from a PA notice that was put on the railings. I agree that this beach is extended but they must also provide the facility of parking, lavatory and showers facilities.

4. Do you participate in beach management all year round or only in summer? If the latter, please specify the dates? Do you know what happens outside these dates?

Coding Density

BF Improved

Problems and solutions in BF

Maintenance

Management plans and policies

Benefits

Meetings

Drawbacks

Current

Blue Flag

Responsible for shoreline

Dither

Role

Definitions

Kiosk

Issues

Improvements

Participation